IMPORTANT

Before you remove the Wire-Seal, check the contents of this envelope with the listing on the front of the envelope. If any part is missing, your Howard W. Sams distributor will replace the entire PHOTOFACT set IF the Wire-Seal has not been damaged.

This PHOTOFACT Folder Set is

WIRE-SEALED FOR YOUR PROTECTION

to guarantee completeness of contents

DO NOT ACCEPT IF SEAL HAS BEEN BROKEN

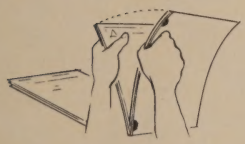
TO OPEN ***JUST DO THIS:***

1

Take hold of the Set with both hands. Place your thumbs directly under the top wire-seal; then, divide the contents equally by putting your thumbs midway through the thickness of the Set. Now, pull the two sections apart at the top, firmly.

2

Repeat this process, pulling close to the wire-seal at the bottom, so that the set is now divided into two equal parts.



3

Continue this "pulling-apart" process with the section in which the wire-seals remain, dividing it in half.

4

Finally, remove the wire-seals left in the last section; this can easily be done with your fingernail or any sharp instrument.

Your "Safety-Sealed" PHOTOFACT Set is now ready for profit-making use . . .

IMPORTANT

Before you remove the Wire-Seal, check the contents of this envelope with the listing on the front of the envelope. If any part is missing, your Howard W. Sams distributor will replace the entire PHOTOFACT set IF the Wire-Seal has not been damaged.

The PHOTOFACT® Servicer

SET 531 ★ *Published for all users of Howard W. Sams' Photofact Folders* ★ MAY 1961

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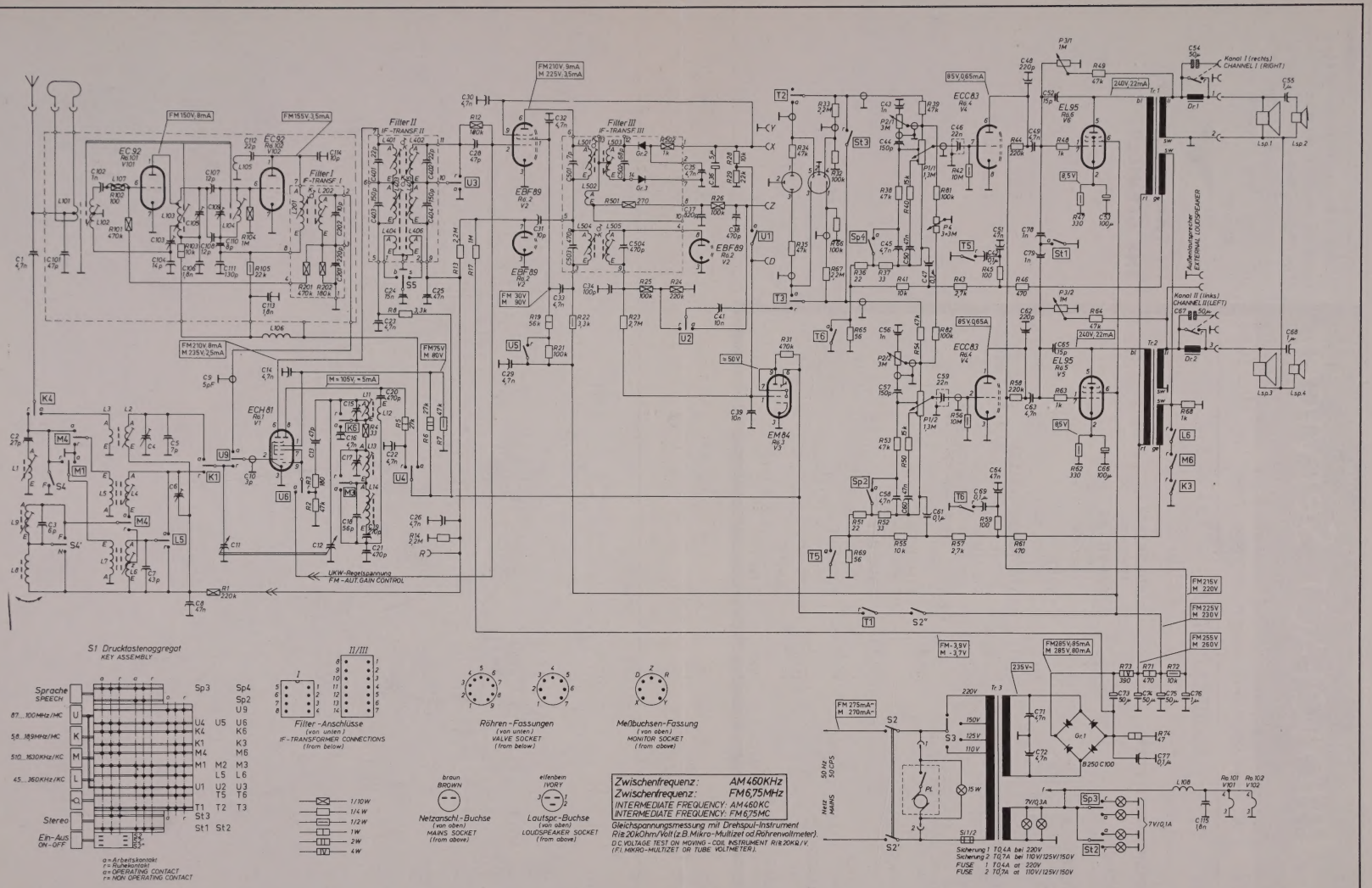
This Servicer provides you with essential data on other models or special equipment not covered in standard PHOTOFACT folders. The schematics and supplementary data included here will be of valuable help to you in servicing this equipment.

IN THIS ISSUE OF THE SERVICER:

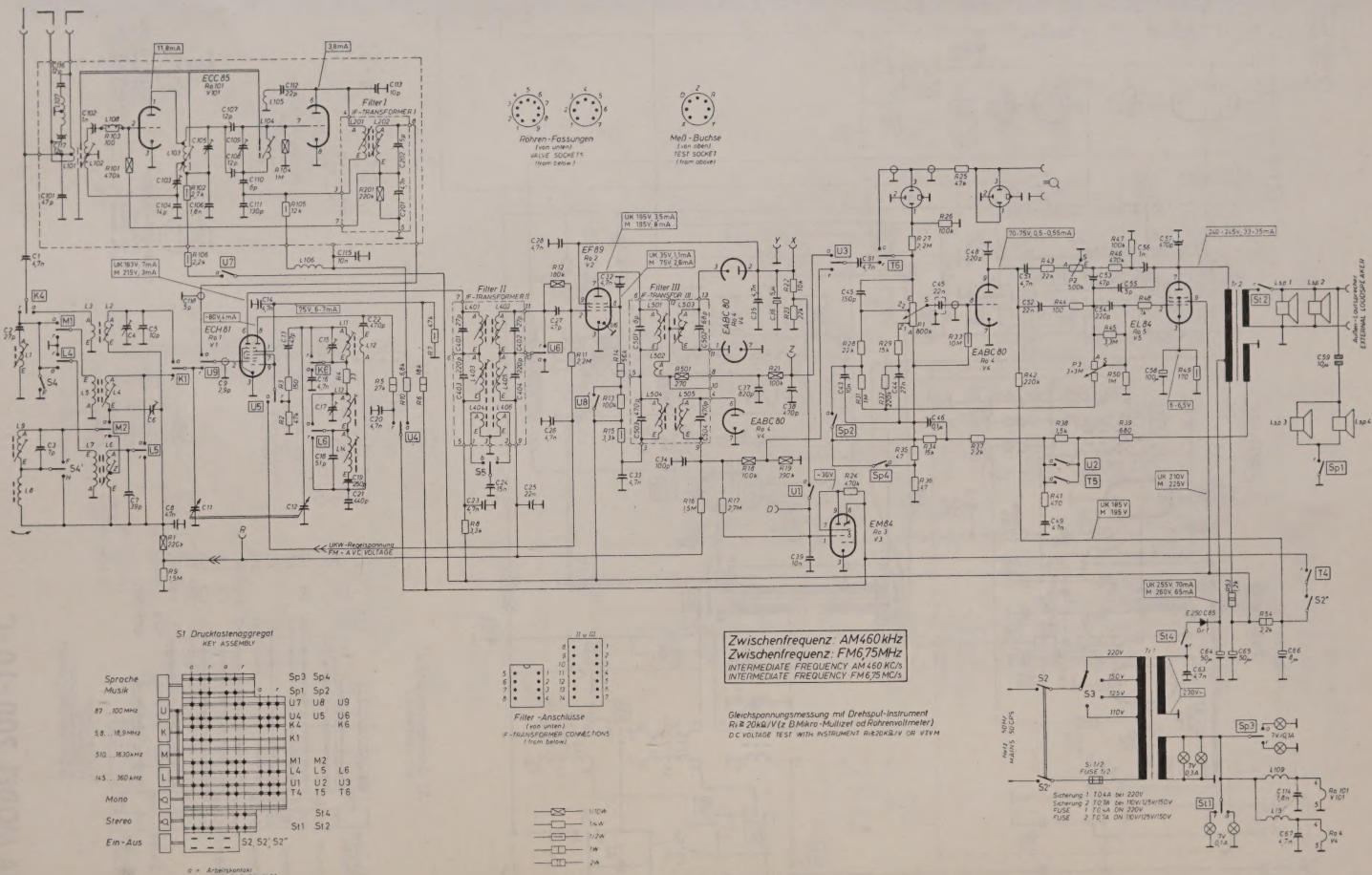
Saba Model 100-10-T

Saba Model 200-10-C



SABA MODEL 200-10-C

Schematic Diagram Courtesy of Saba: Importer A. E. Dufenhorst Company



SABA MODEL 100-10-T

Schematic Diagram Courtesy of Saba: Importer A. E. Dufenhorst Company

PHOTOFACT® Folder

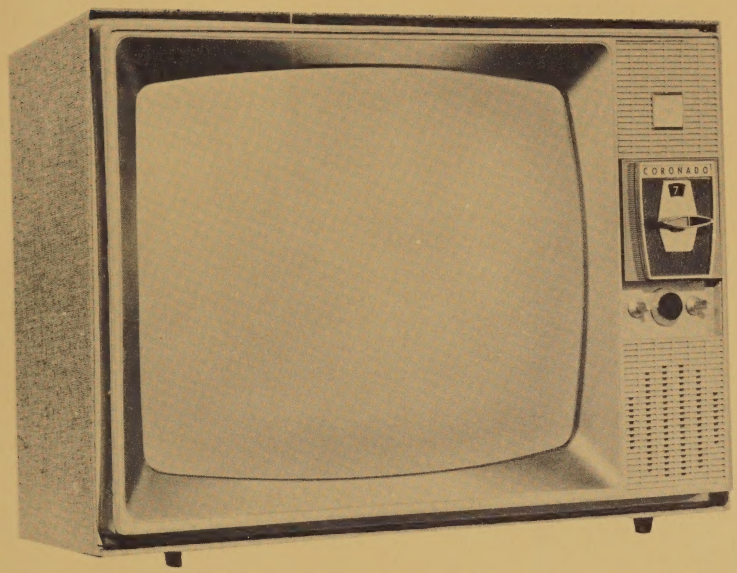
CORONADO
MODEL TV2-9491A

IMPORTANT FILING NOTICE

The TV Folder for this envelope will be found among the first folders in this complete Set of folders.

Merely insert the corresponding folder on this model in this envelope to retain proper filing and indexing order.

CORONADO
MODEL TV2-9491A



CORONADO
MODEL TV2-9491A

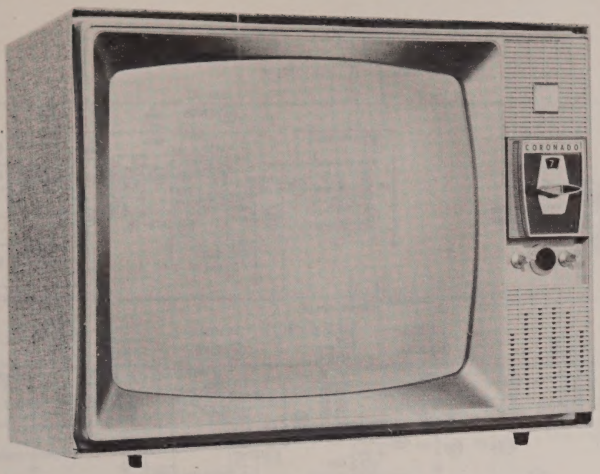
MODEL TV2-9491A

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed. Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. © 1961 Howard W. Sams & Co., Inc., Indianapolis 6, Indiana. Printed in U.S. of America

DATE 5–61 SET 531 FOLDER 1

SET 531 FOLDER 1



MODEL TV2-9491A

CAUTION

ONE SIDE OF AC LINE CONNECTED TO CHASSIS.

Care should be exercised when connecting test equipment or physically contacting chassis. Isolation devices employed by manufacturer should be checked and properly connected before returning receiver to owner.

TRADE NAME	Coronado, Model TV2-9491A
SUPPLIER	Gamble-Skogmo, Inc., 15 North 8th Street, Minneapolis, Minnesota
TYPE SET	Television Receiver
TUBES	VHF - Sixteen, UHF - Seventeen
POWER SUPPLY	110-120 Volts AC, 60 Cycle RATING VHF - 160 Watts, 1.5 Amp. @ 117 Volts AC
TUNING RANGE	Channels 2 thru 13 VHF, 14 thru 83 UHF, Video IF 45.75MC, Sound IF 41.25MC (Intercarrier)

SERVICING IN THE FIELD

SAFETY GLASS REMOVAL

It is necessary to remove the chassis and picture tube for safety glass cleaning and removal. (See "Disassembly Instructions", Page 16.)

FUSE DEVICE

A 7.5Ω fusible resistor is used for low voltage power supply protection. (For location, see "Tube Placement Chart".)

TUNER OSCILLATOR ADJUSTMENT

To touch up VHF Oscillator, remove knobs and front panel.

AGC

The AGC may be varied by means of an AGC Control. (For location, see "Tube Placement Chart".)

SYNC STABILITY

Sync stability may be varied by means of a Sync Stability Control. (For location, see "Tube Placement Chart".)

HORIZONTAL OSCILLATOR FIELD ADJUSTMENT

The Horizontal Frequency Slug is used for the Horizontal Hold. (For location, see "Tube Placement Chart".)

HORIZONTAL DRIVE

The horizontal drive may be varied by a Horizontal Drive Trimmer. (For location, see "Tube Placement Chart".)

BUZZ ADJUSTMENT

To eliminate intercarrier buzz, adjust the Buzz Control for MINIMUM buzz and maximum sound. (For location, see R8 in Photo "Chassis - Top View".)

CENTERING

Centering is accomplished by 2 magnetic rings, located behind the yoke, on the neck of the picture tube.

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

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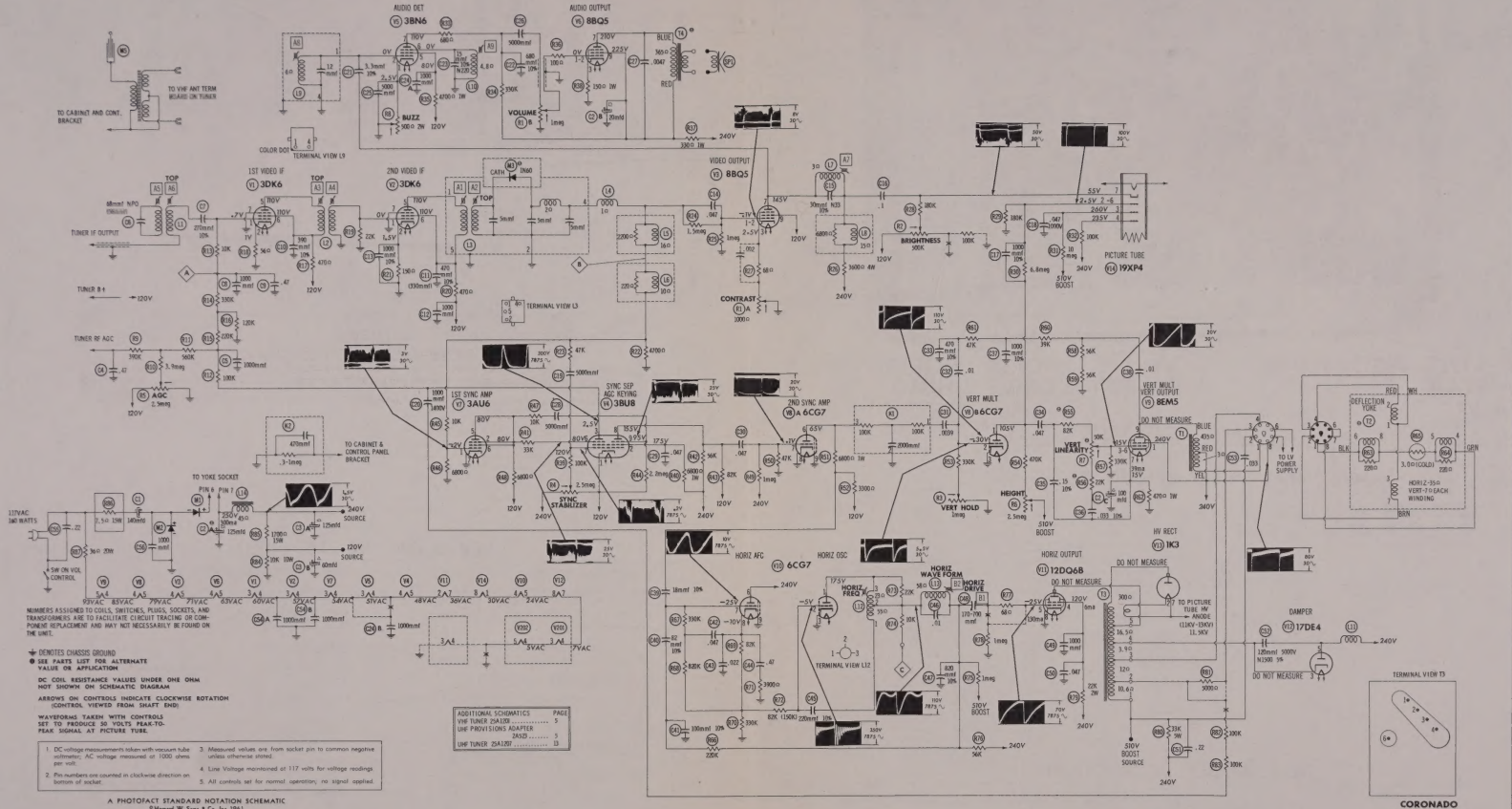

NUMBERS ASSIGNED TO COILS, SWITCHES, PLUGS, SOCKETS, AND TRANSFORMERS ARE TO FACILITATE CIRCUIT TRACING OR COMPONENT REPLACEMENT AND MAY NOT NECESSARILY BE FOUND ON THE UNIT.

⏚ DENOTES CHASSIS GROUND

● SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION (CONTROL VIEWED FROM SHAFT END)

WAVEFORMS TAKEN WITH CONTROLS SET TO PRODUCE 30 VOLTS PEAK-TO-PEAK SIGNAL AT PICTURE TUBE.

ADDITIONAL SCHEMATICS	PAGE
VHF TUNER 25A1209	5
UHF PROVISIONS ADAPTER 25A2D	5
UHF TUNER 25A1207	13

1. DC voltage measurements taken with vacuum tube voltmeter; AC voltage measured at 1000 ohms per volt.
2. Pin numbers are counted in clockwise direction on bottom of socket.
3. Measured values are from socket pin to common negative unless otherwise stated.
4. Line Voltage maintained at 117 volts for voltage readings.
5. All controls set for normal operation; no signal applied.

A PHOTOFACT STANDARD NOTATION SCHEMATIC
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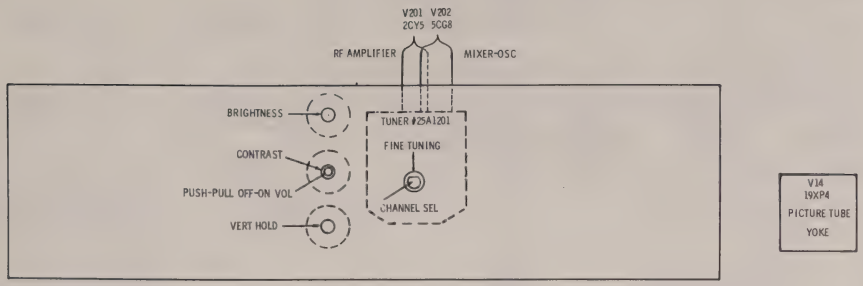
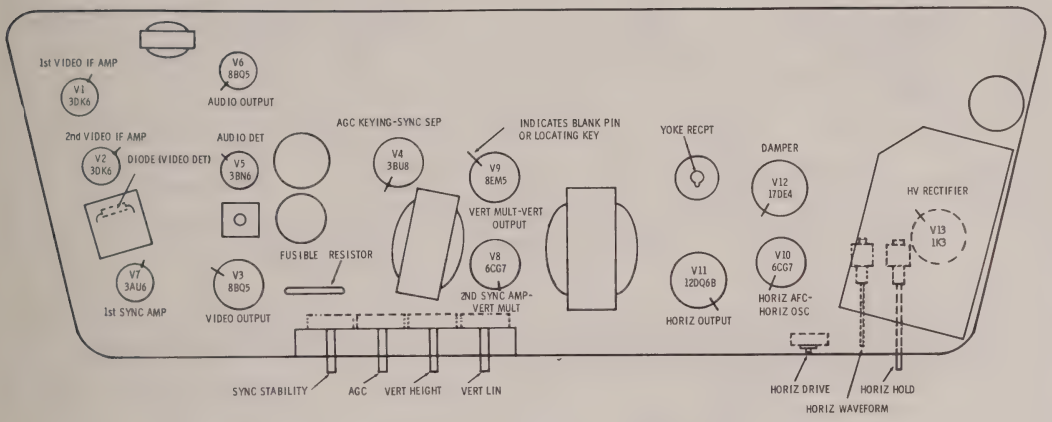
TUBE PLACEMENT CHART



TOP VIEW



CORONADO
MODEL TV2-9491A

TUBE FAILURE CHECK CHART

The following chart lists tubes whose failures are most likely to produce indicated symptoms. Refer to tube placement chart for location and type of tube.

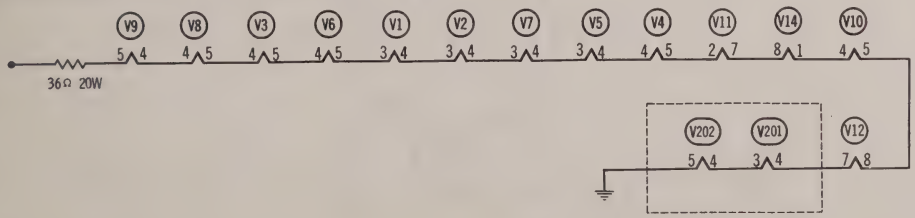
POWER SUPPLY FAILURE
No raster, no sound Fusible Resistor, Rectifiers (B+)

SWEEP FAILURE
No raster, has sound V10, V11, V12, V13, V14
No vertical deflection V8, V9
Poor vert. linearity or foldover V8, V9
Poor horiz. linearity or foldover V10, V11, V12
Narrow picture V10, V11, V12, Rectifier (B+)
Vert. off freq. V8, V9
Horiz. off freq. V10

LOSS OF PICTURE OR SOUND
No pic, no sound, has raster V1, V2, Diode (Video Det.), V3
No pic, no sound, has snow V201, V202
No pic, has sound, has raster V3, V14
Has pic, no sound V5, V6
Overloaded picture V4

SYNC FAILURE
No vert. sync V4, V7, V8
No horiz. sync V4, V7, V8
No vert. or horiz. sync V4, V7, V8

This receiver employs tubes used in a series filament network, an open filament in any tube will cause the set to be inoperative. (See circuit below.)



FOLDER 1

ALIGNMENT INSTRUCTIONS

PRE-ALIGNMENT INSTRUCTIONS

Use an ISOLATION TRANSFORMER TO PROTECT the Test Equipment.
The high voltage lead should be securely taped and kept away from the chassis.
Allow a 20 minute warm-up period for the receiver and test equipment.
Suggested Alignment Tools: GENERAL CEMENT #8606, 8606L, 8282, 9295
WALSCO #2526, 2543, 2544, 2545

VIDEO IF ALIGNMENT

Connect the negative lead of a 7 volt bias supply to point (A) . Positive to chassis.
Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
1.	.01mfd	High side to pin 1 (grid) of 2nd Video IF. Low side to chassis. Adjust output for 4VP-P on scope.	44.0MC (10MC Swp)	42.4MC 45.75MC	Any non-interfering channel	Vert. Amp. thru 47K to point (B) . Low side to chassis. (Across Video Det. load)	A1, A2	Adjust for maximum gain and symmetry of response similar to Fig. 1 with markers as shown. A1 controls marker position and A2 controls gain and symmetry.
2.	"	High side to pin 1 (grid) of 1st Video IF. Low side to chassis. Adjust for 4VP-P on scope.	"	42.4MC 43.5MC 44.5MC 45.75MC	"	"	A3, A4	Adjust for maximum gain and symmetry of response similar to Fig. 2 with markers as shown. A3 controls marker position and A4 controls gain and symmetry.
3.	Direct	Place a thin insulated metal strip between the Mixer-Osc. tube (V202), and tube shield. Connect the high side of sweep generator to the metal strip. Low side to chassis.	"	41.25MC 42.4MC 43.5MC 44.5MC 45.75MC	"	"	A5, A6, & Mixer Plate Coil	Adjust for maximum gain and symmetry of response similar to Fig. 3 with markers as shown. Adjust A5 to place 41.25MC marker in trap notch.

4.5MC TRAP ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
4.	.01mfd	High side to pin 2 (grid) of Video Output. Low side to chassis.	4.5MC (Unmod)	Any non-interfering channel	AC probe to pin 7 (cathode) of picture tube. Common to chassis. Use 0-10V AC scale.	A7	Adjust for MINIMUM deflection.

SOUND IF ALIGNMENT

Tune in a TV station and reduce the signal strength at the antenna terminals until a hiss is heard in the sound similar to super-regeneration.
Adjust A8, A9 and the Buzz control for maximum undistorted sound with MINIMUM buzz.
If the hiss disappears during adjusting, further reduce the signal strength.

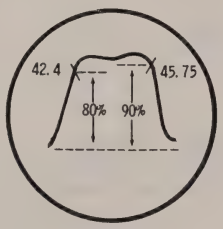


FIG.1

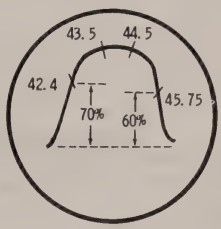


FIG.2

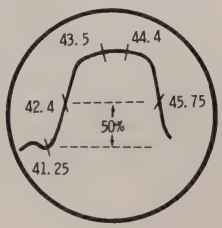
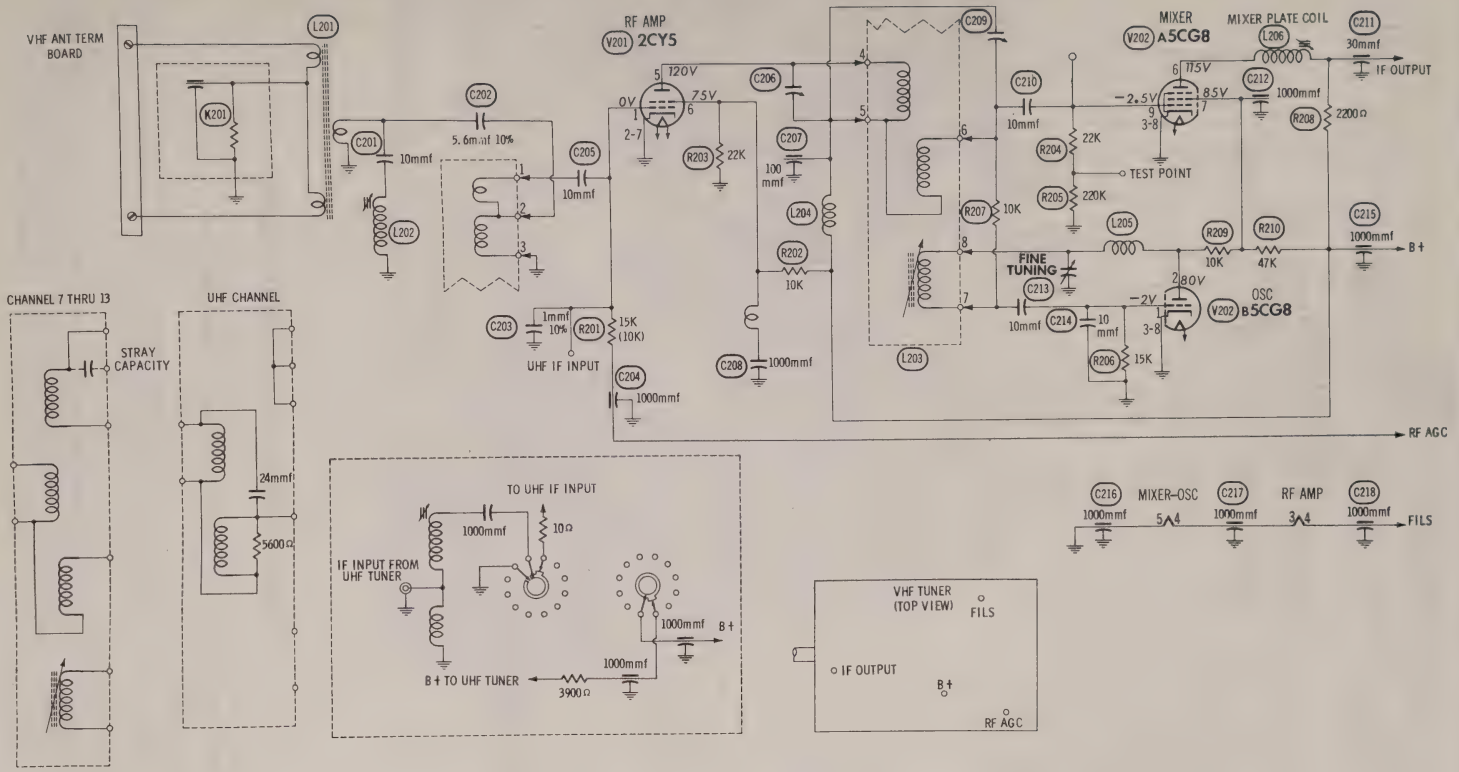


FIG.3



A PHOTOFACT STANDARD NOTATION SCHEMATIC

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VHF TUNER 25A1201 & UHF Provisions ADAPTER 2A523

TUNER PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	TYPE	ITEM No.	USE	TYPE
	• GENERAL ELECTRIC •		RAYTHEON •	SYLVANIA •	
V201	RF Amp.	2CY5	V202	Mixer-Osc.	5CG8

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C201	10		NPO-DI 10	DTZ-10	C10Q1C	CCTO-100	CNO-410	10TCC-Q10
C202	5.6 10%				C10V6C			10TCC-V56
C203	1 10%		NPO-SI 1.0	TCZ-1			CNO-510	10TCC-V10
C204	1000		EF-001	MFT-1000		CCF-102	CT280A	
C205	10		NPO-DI 10	DTZ-10	C10Q1C	CCTO-100	CNO-410	10TCC-Q10
C206								
C207	100		EF-0001	MFT-100				
C208	1000		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C209								
C210	10		NPO-DI 10	DTZ-10	DTZ-10	CCTO-100	CNO-410	10TCC-Q10
C211	30							
C212	10000		EF-001	MFT-1000		CCF-102	CT280A	
C213	10		NPO-DI 10	DTZ-10	C10Q1C	CCTO-100	CNO-410	10TCC-Q10
C214	10		NPO-DI 10	DTZ-10	C10Q1C	CCTO-100	CNO-410	10TCC-Q10
C215	1000		EF-001	MFT-1000		CCF-102	CT280A	
C216	1000		EF-001	MFT-1000		CCF-102	CT280A	
C217	1000		EF-001	MFT-1000		CCF-102	CT280A	
C218	1000		EF-001	MFT-1000		CCF-102	CT280A	

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REPLACEMENT DATA			ITEM No.	RATING	REPLACEMENT DATA		
		IRC PART No.	WORKMAN TV PART No.	REMARKS			IRC PART No.	WORKMAN TV PART No.	REMARKS
R201	15K			* (10K)	R206	15K			
R202	10K				R207	10K			
R203	22K				R208	2200Ω			
R204	22K				R209	10K			
R205	220K				R210	47K			

* Alternate Value

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	PART No.	REPLACEMENT DATA
K201	Antenna Filter		330-1 *	* Sarkes Tarzian Part Number

COILS (RF-IF)

ITEM No.	USE	PART No.	NOTES
L201	Antenna Trans.	3292-501	
L202	Trap Coil	2110-26	
L203A	Ant., RF, Mixer Grid, Osc. Coils	3262-507	Channel 2
B	"	3263-507	Channel 3
C	"	3264-507	Channel 4
D	"	3265-507	Channel 5
E	"	3266-507	Channel 6
F	"	3267-507	Channel 7
G	"	3268-507	Channel 8
L203H	Ant., RF, Mixer Grid, Osc. Coils	3269-507	Channel 9
I	"	3270-507	Channel 10
J	"	3271-507	Channel 11
K	"	3272-507	Channel 12
L	"	3273-507	Channel 13
L204	RF Choke	367-25	
L205	RF Choke	309-5	
L206	Mixer Plate Coil	2110-29	

Note: Part Numbers listed above are Sarkes Tarzian Part Numbers.

TUNER ALIGNMENT INSTRUCTIONS

PRE-ALIGNMENT INSTRUCTIONS

Suggested Alignment Tools: GENERAL CEMENT #5009, 8195, 8274, 8275, 8728, 8729, 8987, 8988, 8989
WALSCO #2515, 2531, 2532

VHF OSCILLATOR ALIGNMENT

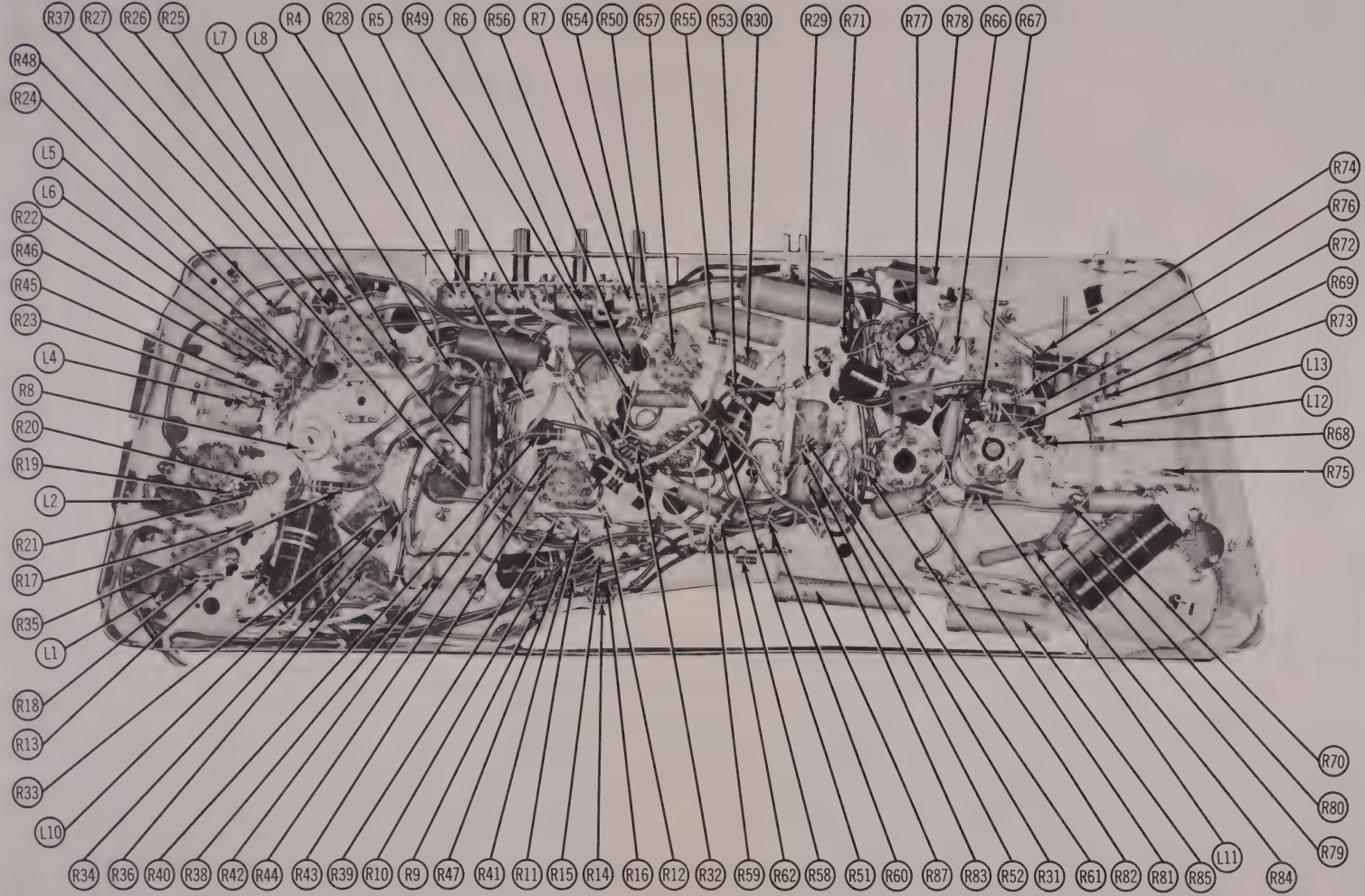
The individual channel adjustment screws are accessible one at a time, thru a hole in the front of the tuner, as the Channel Selector is rotated. Set the Fine Tuning to the center of its range and switch to channel to be adjusted and adjust for best picture and sound.

VHF RF AND MIXER ALIGNMENT

This portion of the tuner has been properly aligned at the factory and is very stable. Alignment of this portion should not be attempted in the field.

UHF TUNER ALIGNMENT

This portion of the tuner has been properly aligned at the factory and is very stable. Alignment of this portion should not be attempted in the field.



CHASSIS BOTTOM VIEW - RESISTOR & INDUCTOR IDENT.

PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	GENERAL ELECTRIC • USE	GENERAL ELECTRIC • TYPE	ITEM No.	RAYTHEON • USE	RAYTHEON • TYPE	SYLVANIA • USE	SYLVANIA • TYPE
V1	1st Video IF Amp.	3DK8	V8	2nd Sync Amp.-Vert. Mult.	6CG7		
V2	2nd Video IF Amp.	3DK8	V9	Vert. Mult.- Vert. Output	6EM5		
V3	Video Output	8BQ5	V10	Horiz. AFC - Horiz. Osc.	6CG7		
V4	AGC Keying - Sync Sep.	3BU8	V11	Horiz. Output	12DQ6B		
V5	Audio Det.	3BU8	V12	Damper	17DX4		
V6	Audio Output	8BQ6	V13	HV Rectifier	1K3		
V7	1st Sync Amp.	3AU6					

PICTURE TUBE

ITEM No.	REPLACEMENT DATA: CORONADO PART No.	GENERAL ELECTRIC PART No.	RCA PART No.	RAYTHEON PART No.	SYLVANIA PART No.	NOTES
V14	19XP4	19XP4 ①			19XP4 ②	① Aluminized ② Silver Screen "85"

ELECTROLYTIC CAPACITORS

ITEM No.	RATING: CAP	RATING: VOLT	REPLACEMENT DATA: CORONADO PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	NOTES
C1	140	150	45X421	AFHS-23	XA035i	FP117	TMS-1270	TVL-1428	
C2A	125	300	45X478 ①	AFHS3-99-80	XC0733.4	FP326.78	TMQ-4277	TVL-3574.5	
B	20	300							
C	100	50							
C3A	125	300	45X467	AFH3-99-82	D0046	FP330.27	TMT-3310	TVL-3574.6	
B	80	300							

① Some versions may use Part #45X488.

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	REMARKS	REPLACEMENT DATA: AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C4	.47 200V		P288N-47		CUB2P47	2DP-5-474	GEM-2047	2TM-P47
C5	1000		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C6	68 NPO	† (56)	NPO-DI 68	DTZ-68	C10Q68C	CCTO-680	CNO-468	10TCC-Q68
C7	270 10%		DI-270	DD-271	L10T27	CCD-271	GP327	10TS-T27
C8	1000		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C9	.47 200V		P288N-47		CUB2P47	2DP-5-474	GEM-2047	2TM-P47
C10	390 10%		DI-390	DD-391	L10T39	CCD-391	GP339	10TS-T39
C11	470 10%	† (330)	DI-470	DD-471	L10T47	CCD-471	GP347	10TS-T47
C12	1000		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C13	1000 10%		DI-1000	DD-102	PM5D1	CCD-102	GP210	10TS-D10
C14	.047 200V		P288N-047	DD-503	CUB2S47	4DP-3-473 *	GEM-4147	2TM-S47
C15	30 N33 10%	#47X5669						
C16	.1 400V		P488N-1	DF-104	CUB4P1	4DP-3-104	GEM-401	4TM-P10
C17	1000 10%		DI-1000	DD-102	5R5D1	CCD-102	GP210	10TS-D10
C18	.047 1000V		P5S8N-047		CUB10S47	16DP-5-473	GEM-10147	10TM-S47
C19	5000		BPD-005	DD-502	BYA10D5	CCD-502	B-250	5HK-D50
C20	1000 1400V		HVD15-1000	DD50-102	HVB15D1	3CCD-102	5HV-210	B1-D10
C21	3.3 10%		NPO-SI 3.3	TCZ-3R3	CV73C	CCTO-3R3	CNO-533	10TCC-Y33
C22	680 10%		DI-680	DD-681	5R5T68	CCD-681	GP368	10TS-T68 10TCR-Q25
C23	15 N220 10%	#47Z872						
C24A	1000		BPD-1X001	DD3-102	BYD6DD1	CCD-102	B2X210	5HK-2D10
B	1000					CCD-102		
C25	5000		BPD-005	DD-502	BYA10D5	CCD-502	B-250	5HK-D50
C26	5000		BPD-005	DD-502	BYA10D5	CCD-502	B-250	5HK-D50
C27	.0047 600V		P688N-0047	DB-472	CUB6D47	6DP-1-472	GEM-6247	6TM-P47
C28	5000		BPD-005	DD-502	BYA10D5	CCD-502	B-250	5HK-D50
C29	.047 400V		P488N-047	DD-503	CUB4S47	4DP-3-473	GEM-4147	4TM-S47
C30	.047 400V		P488N-047	DD-503	CUB4S47	4DP-3-473	GEM-4147	4TM-S47
C31	.0039 400V		P694CM-0039	DD-392	DPM9D392	6DP-1-392	GP239	6PS-D39
C32	.01 400V		P488N-01	DB-103	CUB4S	4DP-1-103	GEM-411	4TM-S10
C33	470 10%		DI-470	DD-471	5R5T47	CCD-471	GP347	10TS-T47
C34	.047 600V		P688N-047	DD-503	CUB6S47	6DP-3-473	GEM-6147	6TM-S47
C35	.15 200V 10%		V84C2P15-10%		PM2P15	2DP-3-154	GEM-2015	2TM-P15
C36	.033 200V 10%		V84C2S33-10%		PM5S33	4DP-3-333	GEM-4133	6TM-S33
C37	1000 10%		DI-1000	DD-102	PM5D1	CCD-102	GP210	10TS-D10
C38	.01 600V		P688N-01	DE-103	CUB6S	6DP-2-103	GEM-611	6TM-S10
C39	18 10%		1469-000018	TCZ-18	2ZR5Q18	CM-19B-180K	CNO-418	MS-418
C40	82 10%		1469-000082	TCZ-82	2ZR5Q82	CM-19B-820K	CNO-482	MS-482
C41	100 10%		1469-0001	TCZ-100	2ZR5T1	CM-19B-101K	MCR225	MS-31
C42	.047 200V		P288N-047	DD-503	CUB2S47	4DP-3-473	GEM-4147	2TM-S47
C43	.022 200V		P288N-022	DD-203	CUB4S22	4DP-2-223	GEM-4122	2TM-S22
C44	.47 400V		P288N-47		CUB2P47	2DP-5-474	GEM-2047	2TM-P47
C45	220 10%		1469-00022	TCZ-220	2ZR5T22	CM-19B-221K	CNO-322	MS-322
C46	.01 400V		P488N-01	DB-103	CUB4S	4DP-1-103	GEM-411	4TM-S10
C47	820 10%		1469-00082		5R5T82	CM-19B-821K 469	MCB2B1	MS-382
C48	170-700	#47A278						
C49	1000		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C50	.047 400V		P488N-047	DD-503	CUB4S47	4DP-3-473	GEM-4147	4TM-S47
C51	.22 600V		P686N-22		CUB6P22	6DP-5-224	GEM-6022	6TM-P22
C52	120, 5000V N1500 5%							
C53	.033 600V		P688N-033	DD-303	CUB6S33	6DP-3-333	GEM-6133	6TM-S33
C54A	1000		BPD-2X001	DD3-102	BYD6DD1	CCD-102	B2X210	5HK-2D10
B	1000					CCD-102		
C55	.22 400V		P488N-22		CUB4P22	4DP-5-224	GEM-4022	4TM-P22
C56	1000		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10

† Alternate Value.
* Not normally in distributor's stock. Available thru distributor on order to manufacturer.
# Coronado Part Number

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: CORONADO PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	1000Ω	½	78X39	F1-4			▪ U24202-S	Contrast
B	1meg	½		R7F1-57 *	RTV-726			Volume
C	Switch			Not Req.				Push-Pull Off-On

CONTROLS (cont)

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: CORONADO PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	INSTALLATION NOTES
R2A	500K	½	40X490	AB-59	A47-500K-S	BU-133	U50	Brightness
B	Shaft			AE-33	SK3	SK3	D8-37	
R3A	1meg	½	40X489	AB-59	A47-1meg-S	BU-137	U54	Vert. Hold
B	Shaft			AE-33	R8-3/8	SK3	D8-37	
R4	2.5meg	½	40X486-1	TT-83	B47-2.5meg-S	BLC2	SU-585	Sync Stabilizer
R5	2.5meg	½	40X486-1	TT-83	B47-2.5meg-S	BLC2	SU-585	AGC
R6	2.5meg	½	40X486-1	TT-83	B47-2.5meg-S	BLC2	SU-585	Height
R7A	50K	½	40X467-1	TT-31	B47-505-S	BU-133	FTA54L	Vert. Linearity Note 1
B	Shaft			Not Req.	Not Req.	TM4	Not Req.	
R8	500Ω	2(WW)	40X472			110-500	PTL-500	Buzz Control

* Do not use Tap.
Note 1. Some versions may use 150K (Pt. #40X493-1) for R7. R55 & R56 not used with this application.
▪ "STA-LOC" Equivalent: FA15L, RUP16L, OF16S5.

RESISTORS

All wattages 1/2 watt, or less, unless otherwise noted.

ITEM No.	RATING	REPLACEMENT DATA: IRC PART No.	WORKMANTV PART No.	REMARKS
R9	390K			
R10	3.9meg			
R11	560K			
R12	100K			
R13	10K			
R14	330K			
R15	220K			
R16	120K			
R17	470Ω			
R18	56Ω			
R19	22K			
R20	470Ω			
R21	150Ω			
R22	4700Ω			
R23	47K			
R24	1.5meg			
R25	1meg			
R26	3600Ω 4W	PW5-3600	4G-3600	#43X331
R27	680Ω			
R28	180K			
R29	180K			
R30	6.8meg			
R31	10meg			
R32	100K			
R33	680Ω			
R34	330K			
R35	4700Ω 1W			
R36	100Ω			
R37	330Ω 1W			
R38	150Ω			
R39	100K			
R40	6800Ω 1W			
R41	33K			
R42	56K			
R43	82K			
R44	2.2meg			
R45	10K			
R46	6800Ω			
R47	10K			
R48	6800Ω			

ITEM No.	RATING	REPLACEMENT DATA: IRC PART No.	WORKMANTV PART No.	REMARKS
R49	1meg			
R50	47K			
R51	6800Ω 1W			
R52	7300Ω			
R53	330K			
R54	470K			
R55	82K *			
R56	82K *			
R57	330K			
R58	56K			
R59	56K			
R60	39K			
R61	47K			
R62	4700 1W			
R63	220Ω			
R64	220Ω			
R65	3.0Ω (Cold)			
R66	220K			
R67	330K			
R68	820K			
R69	82K			
R70	330K			
R71	3900Ω			
R72	82K			* (150K)
R73	22K			
R74	10K			
R75	1meg			
R76	56K			
R77	68Ω			
R78	1meg			
R79	22K 2W			
R80	33K 5W	PW5-33K	5G-33K	#43X356
R81	5600Ω			
R82	100K			
R83	100K			
R84	10K 10W	PW10-10K	10G-10K	#43X324
R85	17000 15W †			#43X347
R86	7.5Ω 15W †	FR-7.5	F80	#43X297
R87	36Ω 20W			#43X315

Coronado Part Number
* Alternate Value
* Not used when 150K Vert. Linearity Control is used.
† Fusible Type

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	CORONADO PART No.	REPLACEMENT DATA
K1	Vert. Integrator	2000mmf, 100K, 100K	76X19	
K2	Isolation	470mmf, ▪ 3-lmeg	76X18	Centralab RC-471 Sprague AC1-1

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA: CORONADO PART No.	Merit PART No.	Miller PART No.	Stancor PART No.	Workman TV PART No.	NOTES
L1A	1st Video IF	9A2436	TV-156				① Includes Complete Assy. ② Alternate Part #9A2432. ③ Wound on 2200Ω Res. ④ Wound on 220Ω Resistor ⑤ Wound on 6800Ω Res. * Parallel with 2200Ω Res. ▲ Parallel with 220Ω Res. ▪ Parallel with 6800Ω Res
B	41.25MC Trap						
L2	2nd Video IF	9A2444					
L3A	3rd Video IF	9A2483 ①					
B	RF Choke						
L4	Peaking (30uh)	9A2375 ②	TV-180	6176	RTC-8593	T306	
L5	Peaking (240uh)	38A50 ③	TV-185 *	6181 *	RTC-8598 *	T315 *	
L6	Peaking (180uh)	38A18 ③	TV-182 ▲	6183 ▲	RTC-8585 ▲	T307 ▲	
L7	4.5MC Trap	9A2366	TV-151	1469	RTC-8602	T250	
L8	Peaking (190uh)	38A44 ③	TV-197 ▲	6154 ▲	RTC-8586 ▲	T312 ▲	
L9	Sound Takeoff	9A2434	TV-154	1470-A	RTC-8604	T247	
L10	Quadrature	9A2367	TV-121	1480	RTC-8605	T251	
L11	RF Choke (1.5uh)	9A2380	BC-562	4504	RTC-8516	T858	

COILS (SWEEP CIRCUITS)

ITEM No.	USE	REPLACEMENT DATA: CORONADO PART No.	Merit PART No.	Miller PART No.	Rogers PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	Workman TV PART No.
L12	Horiz. Osc.	9A2481							
L13	Horiz. Waveform	9A2372	MWC-12	6315	QRC104	RTC-8628	HS-8	WLC-3	T110

FILTER CHOKE

ITEM No.	RATINGS: CURRENT (Measured)	RATINGS: DC RES.	RATINGS: INDUCTANCE @ CURRENT 1000 ^(-1)	REPLACEMENT DATA: CORONADO PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
L14	.300A	45Ω	1 Hy.	52X104-2	C-4084	C-2343 ①	36C44	C-28X	① Drill new mounting hole.

TRANSFORMERS (SWEEP CIRCUITS)

ITEM No.	USE	REPLACEMENT DATA: CORONADO PART No.	Merit PART No.	Rogers PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
T1	Vert. Output	51X191-2						
T2	Yoke (Horiz. 18.6MH) (110°) (Vert. 14MH)	9A2477-1 ①		PCM-2017 ②③④	DY-27A ②③④	Y-52 ②	Y-60 & NW23 ②	
	Alt. Yoke	9A2477						
	Yoke Clamp	30X528						
T3	Horiz. Output	53X390						

① Includes rear cover and centering device.
② Connect same as original.
③ Requires new rear cover and centering device.
④ Use original yoke damping network.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE: PRI.	IMPEDANCE: SEC.	REPLACEMENT DATA: CORONADO PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
T4	6000Ω	3-4Ω	51X206A ①	A-3028	A-3877 ②	24S48	S-49X ②	① Alternate Part #61X206. ② Drill new mounting hole.

SPEAKER

ITEM No.	TYPE: SIZE	TYPE: FIELD	TYPE: V. C. IMP.	REPLACEMENT DATA: CORONADO PART No.	QUAM PART No.	NOTES
SP1	4"	PM	3-4Ω	12AS80	4A07	

POWER RECTIFIERS

ITEM No.	RATING: CURRENT (Measured)	REPLACEMENT DATA: CORONADO PART No.	SARKES TARZIAN PART No.	SYLVANIA PART No.	NOTES
M1	.300A	66X33	40H	SR500	
M2	.300A	66X33	40H	SR500	

SIGNAL DIODES

ITEM No.	ORIG. TYPE	REPLACEMENT DATA: CORONADO PART No.	GENERAL ELECTRIC PART No.	RAYTHEON PART No.	SYLVANIA PART No.	NOTES
M3	1N80 †			1N80	1N80	Crystal Diode, Video Det., Pigtail † Alternates 1N87, 1N87A, CK-706A

MISCELLANEOUS

ITEM No.	PART NAME	CORONADO PART No.	NOTES
M4	Tuner	25A1201	VHF, STANDARD COIL REPLACEMENT #GGS-4221A
	Tuner	25A1207	UHF
M5	Antenna	9A2479	JFD REPLACEMENT #TA-409
	Switch	2A253	(UHF Provisions Adapter)

CABINETS & CABINET PARTS

(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

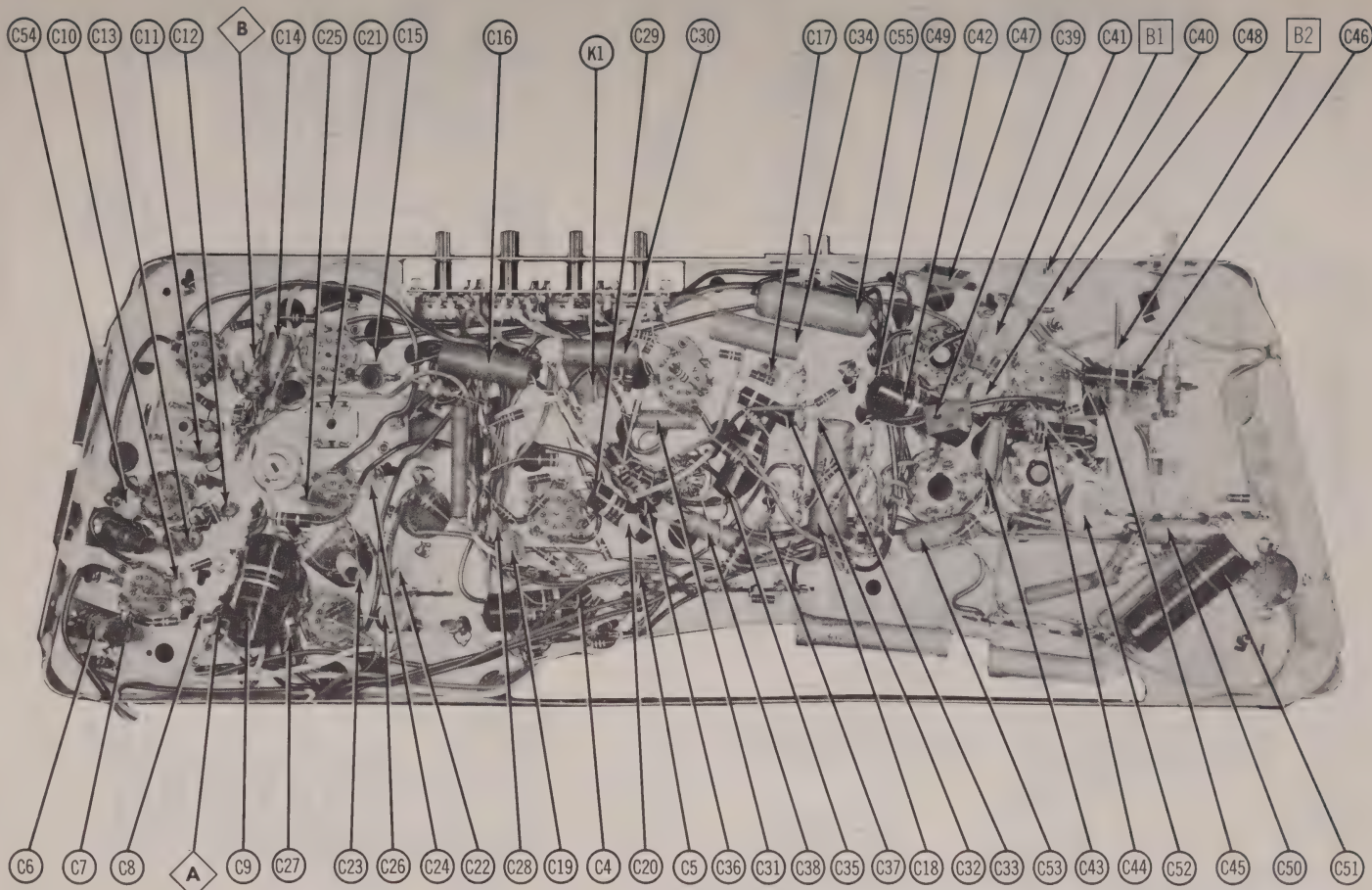
NAME	PART NO.	DESCRIPTION
Safety Glass	17X204	
Knob	10A1014	Contrast
Knob	10A1015	Volume
Knob	10AM61-4	Vertical Hold
Knob	10A1018-2	Horizontal Hold
Knob	10A1018-4	Range (AGC)

WIRING DATA

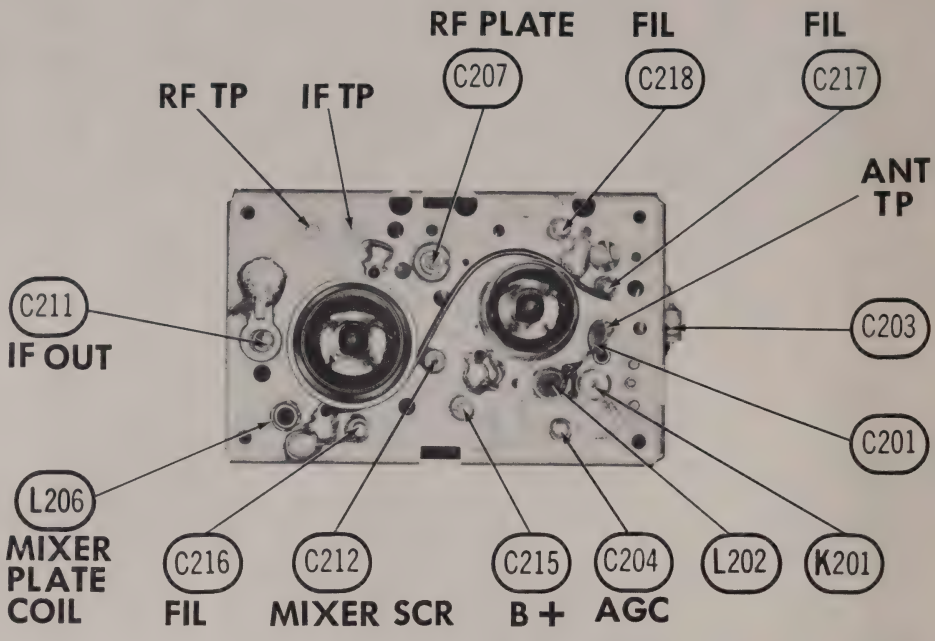
High Voltage Lead	Use BELDEN No. 8869
Shielded Hook-up Wire	Use BELDEN No. 8885 (Single Conductor) 8738 (Two Conductor)
General-use Unshielded Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in Ten Colors 8524 (Stranded) Available in Ten Colors
Power Cord (Interlock Type)	Use BELDEN No. 8874
300Ω Tuner Input Lead	Use BELDEN No. 8225
300Ω Antenna Lead-In	Use BELDEN No. 8230 or 8275
Antenna Rotor Cable	Use BELDEN No. 8464 (Flat) or 8484 (Round) - 4 Conductor 8485 (Round) - 5 Conductor 8486 (Round) - 8 Conductor

CORONADO MODEL TV2-9491A

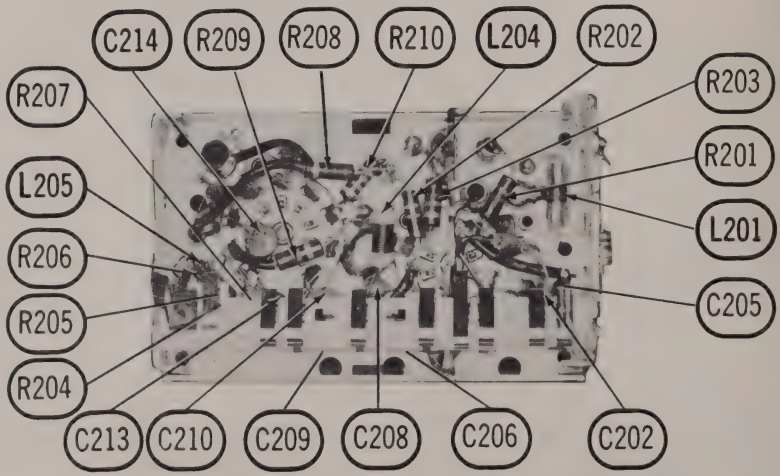
FOLDER 1



CHASSIS BOTTOM VIEW - CAPACITOR & MISC. IDENT.

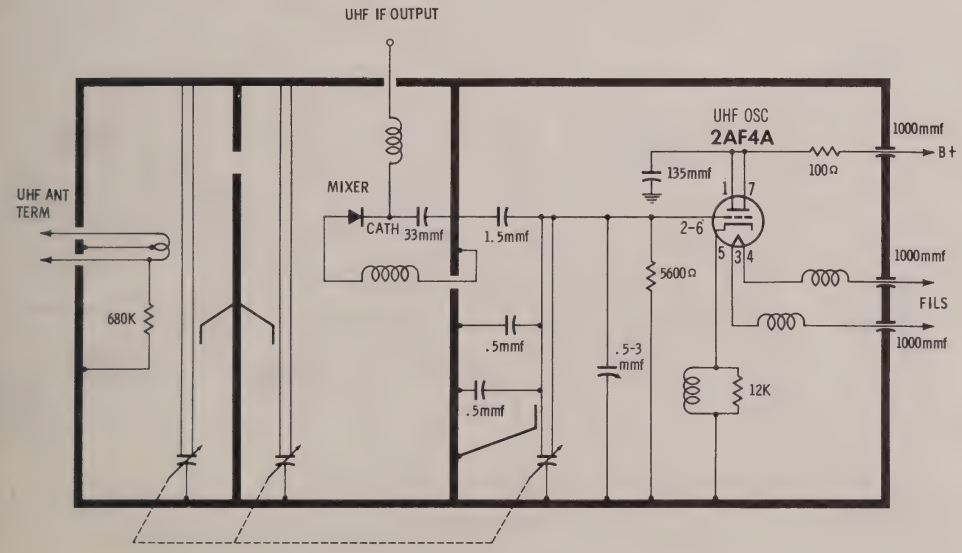


VHF TUNER with UHF Provisions 25A1201 - TOP VIEW



VHF TUNER with UHF Provisions 25A1201 - BOTTOM VIEW

CHASSIS - TOP VIEW



A PHOTOFACT STANDARD NOTATION SCHEMATIC

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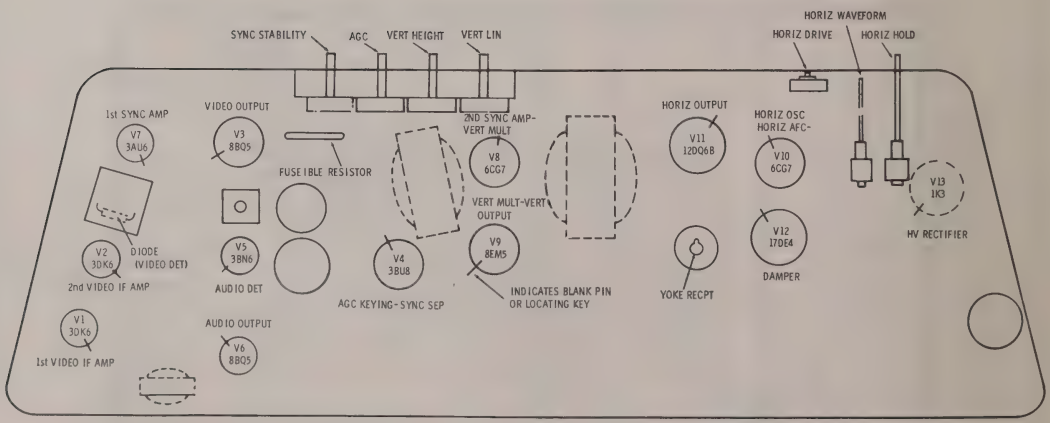
UHF TUNER 25A1207

RESISTANCE MEASUREMENTS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	3DK6	460K	56Ω	46Ω	44Ω	†2100Ω	†2100Ω	0Ω		
V2	3DK6	0Ω	150Ω	44Ω	42Ω	†2100Ω	†2100Ω	0Ω		
V3	8BQ5	NC	700K	• 350Ω	60Ω	51Ω	NC	†3600Ω	NC	†1700Ω
V4	3BU8	†1700Ω	†6800Ω	450K	37Ω	35Ω	†40K	• †500K	†30K	†2.2meg
V5	3BN6	• 300Ω	6Ω	39Ω	37Ω	†6400Ω	4.8Ω	†330K		
V6	8BQ5	NC	• 100Ω	150Ω	51Ω	46Ω	NC	†740Ω	NC	†375Ω
V7	3AU6	5000Ω	†8500Ω	42Ω	39Ω	†8500Ω	†8500Ω	0Ω		
V8	6CG7	• † 1meg	• 520K	0Ω	64Ω	60Ω	†12K	47K	0Ω	0Ω
V9	8EM5	†45Ω	NC	330K	64Ω	70Ω	NC	470Ω	NC	†480Ω
V10	6CG7	†56K	410K	0Ω	24Ω	20Ω	†45Ω	1.5meg	410K	0Ω
V11	12DQ6B	NC	35Ω	TP	†22K	1meg	TP	28Ω	0Ω	TOP CAP †16Ω
V12	17DE4	TP	NC	†30K	NC	†45Ω	TP	4Ω	20Ω	
V13	1K3	PINS 1 THRU 8 HAVE INFINITE RESISTANCE								TOP CAP †315Ω
V14	19XP4	24Ω	180K	† 10meg	†100K	NC	NC	• 300K	28Ω	
V201	2CY5	1.2meg	0Ω	3Ω	4Ω	†1700Ω	†9500Ω	0Ω		
V202	5CG8	15K	†10K	0Ω	3Ω	0Ω	†4000Ω	†16K	0Ω	240K
ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9

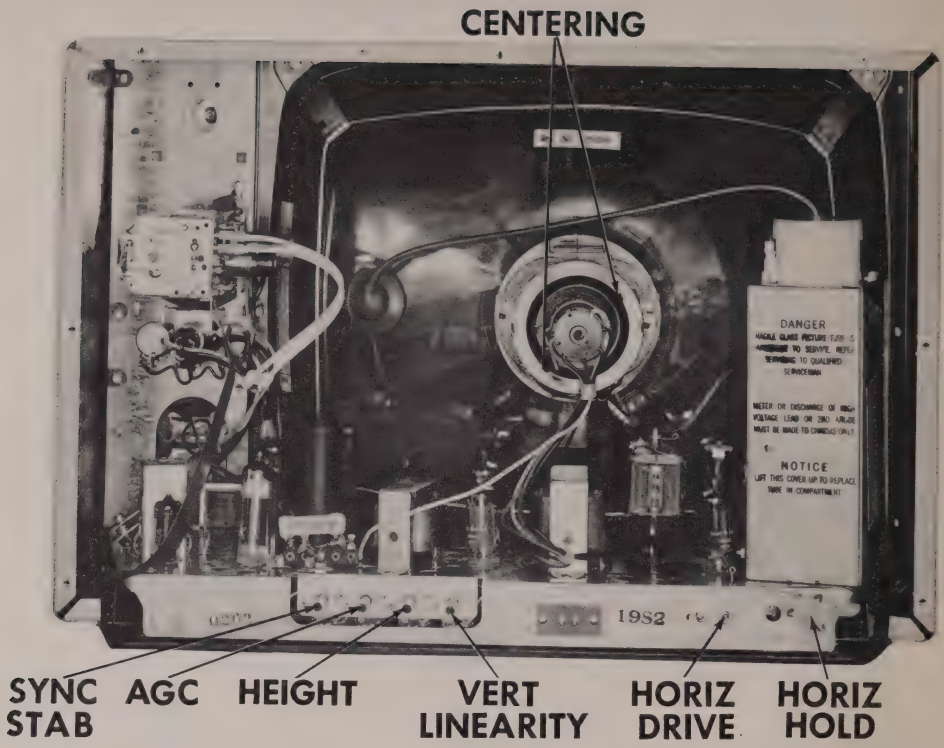
• THIS READING WILL VARY. CONTROL SET FOR NORMAL OPERATION.
† MEASURED FROM OUTPUT OF M1.
† MEASURED FROM PIN 3 OF V12.

NC NO CONNECTION
TP TIE POINT



BOTTOM VIEW

TUBE PLACEMENT CHART



CABINET—REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Suggested Alignment Tools:
B1 ... GENERAL CEMENT #5000, 5003, 5066, 8276, 8290, 9087, 9089
WALSCO #2512, 2525, 2528
B2 ... GENERAL CEMENT #8282, 8606, 8606L, 9295, 9440
WALSCO #2526, 2543, 2544, 2545

Turn set on and tune in a TV station. Adjust Horiz. Hold (Freq. Slug) until picture synchronizes horizontally.

Turn the Contrast Control fully counterclockwise and the Brightness Control clockwise so that the picture appears washed out. Turn the Horizontal Drive Trimmer (B1) clockwise until white vertical bars (drive lines) appear in the left center portion of the raster, then counterclockwise until the white bars just disappear.

Connect the Vertical Amplifier of the scope to point Ⓒ. Low side to chassis. Adjust the Horizontal Waveform Slug (B2) until the round and sharp peaks of the waveform are equal in amplitude. See Fig. 4. Keep the picture in sync during this adjustment.

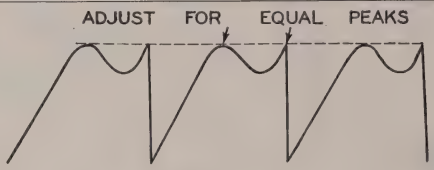


FIG. 4

DISASSEMBLY INSTRUCTIONS

CHASSIS REMOVAL

1. Remove 7 metal screws holding rear cover.
2. Remove rear cover.
3. Remove 6 push-on type knobs from front of cabinet.
4. Remove 4 screws holding front panel over knobs.
5. Remove picture tube socket, yoke plug, high voltage lead, speaker leads, and ground wire from picture tube mounting to chassis.
6. Remove 4 screws holding tuner and control panel assembly.
7. Remove chassis bolts.
8. Remove chassis.

PICTURE TUBE REMOVAL

It is necessary to remove the chassis for picture tube removal.

PHOTOFACT® Folder with CIRCUITRACE®

PHILCO CHASSIS 11H25, 11H25U, 11J27, 11J27R, 11J27U

IMPORTANT FILING NOTICE

The TV Folder for this envelope will be found among the first folders in this complete Set of folders.

Merely insert the corresponding folder on this model in this envelope to retain proper filing and indexing order.

PHILCO CHASSIS 11H25, 11H25U, 11J27, 11J27R, 11J27U

PHILCO CHASSIS 11H25, 11H25U, 11J27, 11J27R, 11J27U

MODEL J3210PL (CH. 11J27)

SET 531 FOLDER 2

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

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MODEL J3210PL (CH. 11J27)

CAUTION

ONE SIDE OF AC LINE CONNECTED TO CHASSIS.

TRADE NAME	PHILCO MODELS	Chassis	VHF Tuner	UHF Tuner
	J3049L	11H25	T-102	
	J3208, J3210PL, J3212AQ, J3212G, J3212GL, J3214SG	11J27	T-102	
	J3214SL, J3214WL (with Pneumatic Remote Tuning)	11J27R	T-102	
	UJ3049L	11H25U	T-103	T-28G
	UJ3210PL, UJ3212AQ, UJ3212G, UJ3212GL, UJ3216SG, UJ3216WL	11J27U	T-103	T-28G

MANUFACTURER	Philco Corp., Tioga & "C" Streets, Philadelphia, Pennsylvania
TYPE SET	Television Receiver
TUBES	VHF - Fifteen, UHF - Sixteen
POWER SUPPLY	110-120 Volts AC, 60 Cycle RATING VHF - 130 Watts, 1.35 Amp. @ 117 Volts AC
TUNING RANGE	Channels 2 thru 13 VHF, 14 thru 83 UHF, Video IF 45.75MC, Sound IF 41.25MC (Intercarrier)

SERVICING IN THE FIELD

SAFETY GLASS REMOVAL

See "Disassembly Instructions" page 16.

FUSE DEVICE

A 5.6Ω fusible resistor is used for low voltage power supply protection. (See "Tube Placement Chart" for location.)

TUNER OSCILLATOR ADJUSTMENTS

To touch up the VHF Oscillator, remove Channel Selector and Fine Tuning knobs.

FOCUS

The focus may be varied by connecting the lead from pin 4 of the picture tube to various voltage points. (For location, see photo "Cabinet - Rear View".)

HORIZONTAL OSCILLATOR FIELD ADJUSTMENTS

Coarse adjustment of the Horizontal Hold is accomplished by the proper cetting of the Horizontal Hold Centering Control. (For location, see "Tube Placement Chart".)

WIDTH

In chassis 11J27 the width may be varied by a Width Control. Chassis 11H25 uses a jumper wire across Horizontal Output Tube screen resistor (when increase in width is needed.) See TV Schematic

CENTERING

Centering is accomplished by 2 magnetic rings, located behind the yoke, on the neck of the picture tube.

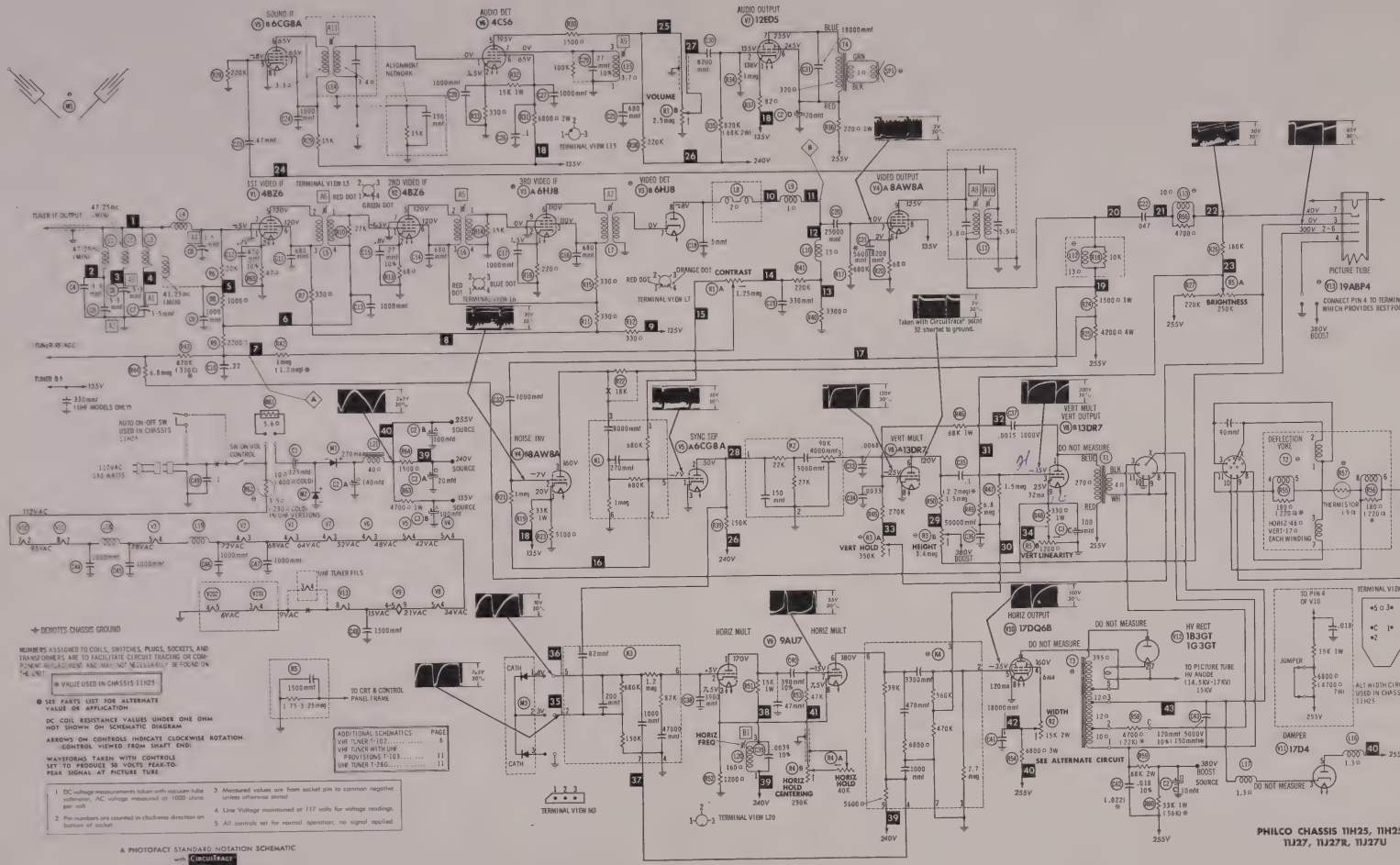
HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed. Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. © 1961 Howard W. Sams & Co., Inc., Indianapolis 6, Indiana. Printed in U.S. of America

KA608

PHILCO CHASSIS 11H25, 11H25U, 11J27, 11J27R, 11J27U

SET 531 FOLDER 2


SOUND IF V9 6CG8A
AUDIO DET V6 4CS6
AUDIO OUTPUT V7 12ED5
1ST VIDEO IF Y1 4BZ6
2ND VIDEO IF Y2 4BZ6
3RD VIDEO IF Y3 6HJ8
VIDEO DET Y3 6HJ8
VIDEO OUTPUT V4 8AW8A
NOISE INV H 8AW8A
SYNC SEP V5 6CG8A
VERT MULT V8 13DR7
VERT MULT VERT OUTPUT V8 13DR7
HORIZ MULT V9 9AU7
HORIZ MULT
HORIZ OUTPUT V10 17DQ6B
HV RECT 1B3GT 1G3GT
DAMPER V11 17D4
PICTURE TUBE V13 19ABP4
ALIGNMENT NETWORK
VOLUME
CONTRAST
BRIGHTNESS
HORIZ FREQ
HORIZ HOLD CENTERING
VERT HOLD
HEIGHT
VERT LINEARITY
WIDTH
SEE ALTERNATE CIRCUIT
DO NOT MEASURE
TERMINAL VIEW L5
TERMINAL VIEW L6
TERMINAL VIEW L7
TERMINAL VIEW L15
TERMINAL VIEW L20
TERMINAL VIEW N3
TERMINAL VIEW T3
TUNER IF OUTPUT
TUNER RF AGC
TUNER B+
AUTO ON-OFF SW USED IN CHASSIS 11H25
SW ON VOL CONTROL
UHF TUNER FILS
DEFLECTION YOKE
THERMISTOR
JUMPER
ALT WIDTH CIRCUIT USED IN CHASSIS 11H25
TO CRT & CONTROL PANEL FRAME
TO PICTURE TUBE HV ANODE (14.5KV-17KV) 15KV
TO PIN 4 OF V10
Taken with CircuiTrace® point 32 shorted to ground.
DENOTES CHASSIS GROUND
NUMBERS ASSIGNED TO COILS, SWITCHES, PLUGS, SOCKETS, AND TRANSFORMERS ARE TO FACILITATE CIRCUIT TRACING OR COMPONENT REPLACEMENT AND MAY NOT NECESSARILY BE FOUND ON THE UNIT
VALUE USED IN CHASSIS 11H25
SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION
DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM
ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION CONTROL VIEWED FROM SHAFT END
WAVEFORMS TAKEN WITH CONTROLS SET TO PRODUCE 50 VOLTS PEAK-TO-PEAK SIGNAL AT PICTURE TUBE
ADDITIONAL SCHEMATICS PAGE
VHF TUNER T-102 5
VHF TUNER WITH UHF PROVISIONS T-103 11
UHF TUNER T-28G 11
1 DC voltage measurements taken with vacuum tube voltmeter, AC voltage measured at 1000 ohms per volt
2 Pin numbers are counted in clockwise direction on bottom of socket
3 Measured values are from socket pin to common negative unless otherwise stated
4 Line Voltage maintained at 117 volts for voltage readings.
5 All controls set for normal operation; no signal applied.
A PHOTOFACT STANDARD NOTATION SCHEMATIC with CIRCUITRACE
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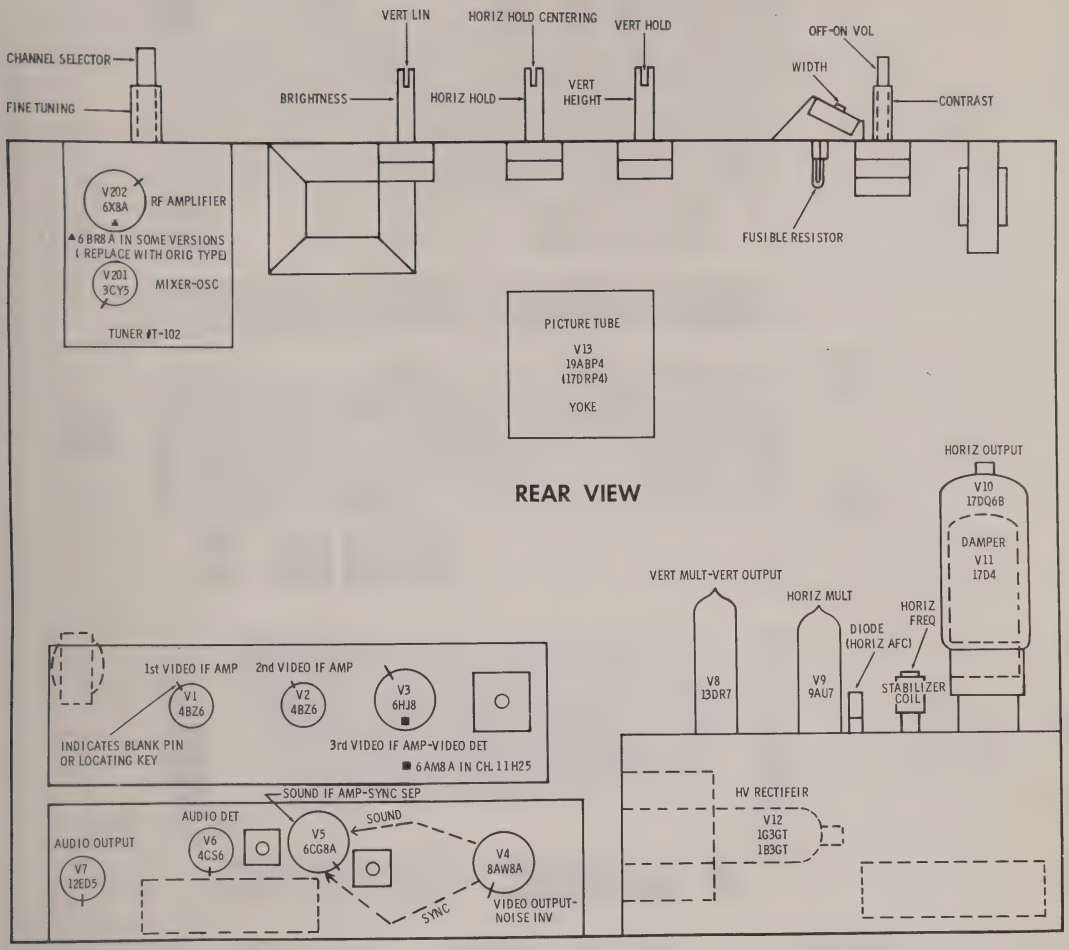
PHILCO CHASSIS 11H25, 11H25U, 11J27, 11J27R, 11J27U

TUBE PLACEMENT CHART



TUBE FAILURE CHECK CHART

The following chart lists tubes whose failures are most likely to produce indicated symptoms. Refer to tube placement chart for location and type of tube.

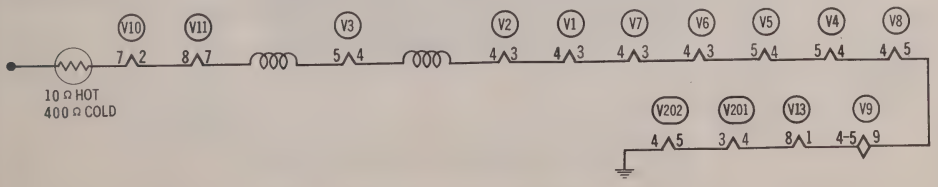
POWER SUPPLY FAILURE
No raster, no sound Fusible Resistor, Rectifiers (B+)

SWEEP FAILURE
No raster, has sound V9, V10, V11, V12, V13
No vertical deflection V8
Poor vert. linearity or foldover V8
Poor horiz. linearity or foldover V9, V10, V11
Narrow picture V9, V10, V11, Rectifiers (B+)
Vert. off freq. V8
Horiz. off freq. Diode (Horiz. AFC), V9

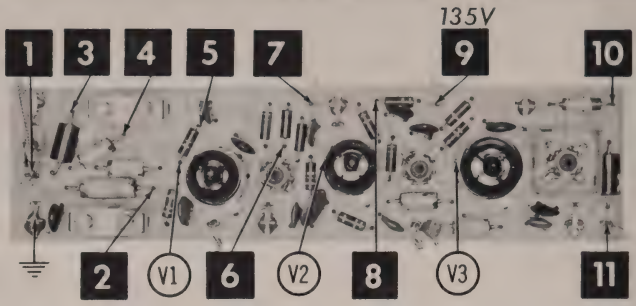
LOSS OF PICTURE OR SOUND
No pic, no sound, has raster V1, V2, V3, V4
No pic, no sound, has snow V201, V202, V1
No pic, has sound, has raster V4, V13
Has pic, no sound V5, V6, V7

SYNC FAILURE
No vert. sync V5
No horiz. sync V5
No vert. or horiz. sync V5

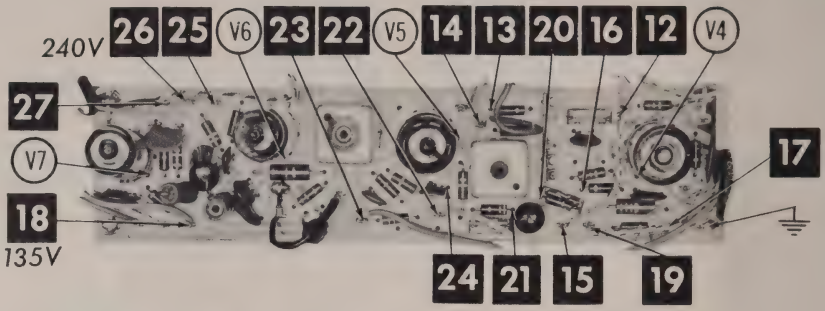
This receiver employs tubes used in a series filament network, an open filament in any tube will cause the set to be inoperative. (See circuit below.)



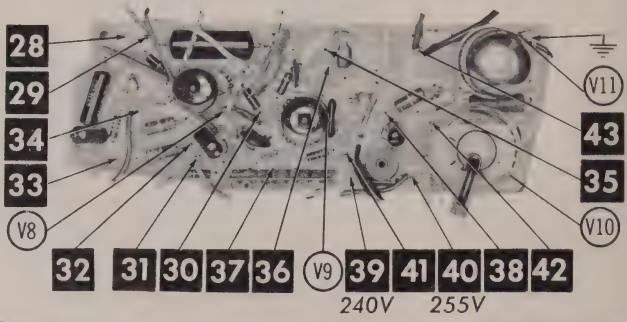
VIDEO IF



VIDEO SOUND SYNC



VERT - HORIZ SWEEP

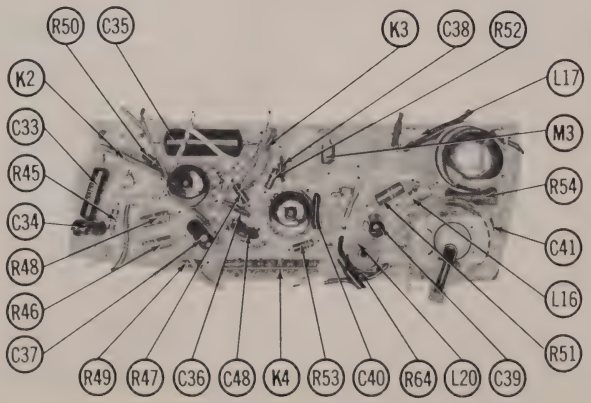


A Howard W. Sams CIRCUITRACE® Photo

PRINTED BOARDS

ARROWS INDICATING TUBE LOCATIONS ARE POINTING TO PIN 1 UNLESS OTHERWISE INDICATED

VERT - HORIZ SWEEP



PRINTED BOARD

ALIGNMENT INSTRUCTIONS

PRE-ALIGNMENT INSTRUCTIONS

Use an ISOLATION TRANSFORMER to PROTECT the Test Equipment.
The high voltage lead should be securely taped and kept away from the chassis.
Allow a 20 minute warm-up period for the receiver and test equipment.
Suggested Alignment Tools: Al thru A4 ... GENERAL CEMENT #5000, 5003, 5014, 5015, 5016, 8276, 8290
WALSCO #2512, 2515, 2522, 2523, 2525, 2537
A5 thru All GENERAL CEMENT #8606, 8606L, 8282, 9295
WALSCO #2526, 2543, 2544, 2545

VIDEO IF ALIGNMENT

Connect the negative lead of an 8 volt bias supply to point (A). Positive to chassis.
Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.
Use only enough generator output to provide a usable indication on VTVM.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
1.	Direct	High side to ungrounded tube shield floating over Mixer-Osc. tube (V202). Low side to chassis.	Not used	47.25MC (400∿ 30% AM)	Any non-interfering channel	Vert. Amp. thru 10K to point (B). Low side to chassis. (Across Video Det. load)	Mixer Plate Coil	Temporarily adjust for maximum 400∿ indication on scope.
2.	"	"	"	41.25MC	"	"	A1	Adjust for MINIMUM 400∿ indication on scope. Bias may be reduced as MINIMUM is approached.
3.	"	"	"	47.25MC	"	"	A2, A3	Adjust for MINIMUM 400∿ indication on scope. Bias may be reduced as MINIMUM is approached. Repeat steps 2 and 3.
4.	"	"	"	45.0MC	"	"	Mixer Plate Coil	Reset bias to correct level. Adjust for maximum 400∿ indication.
5.	"	"	"	42.7MC	"	"	A4, A5	Adjust A4 and A5 for maximum 400∿ indication.
6.	"	"	"	45.75MC	"	"	A6	Adjust for maximum 400∿ indication.
7.	"	"	"	44.4MC	"	"	A7	"
8.	Two 120Ω Carbon Resistors	Across antenna terminals with 120Ω in each lead.	"	65.75MC	4	"	Fine Tuning	Adjust Fine Tuning for MINIMUM 400∿ indication on scope.
9.	"	"	69MC (10MC Swp)	67.25MC 70.5MC	"	"		Use only enough sweep generator output to provide a usable pattern on scope. Check for response similar to Fig. 1. If necessary, retouch Mixer Plate Coil to place 67.25MC marker at 50%. Position 70.5MC marker at 50% by retouching A5 and level top of curve with A7. DO NOT retouch A4 or A6.

4.5MC TRAP ALIGNMENT

Use a 4.5MC tuned detector similar to Fig. 2. Before aligning trap, connect the detector to an accurate source of 4.5MC signal and adjust the coil slug for maximum DC voltage output.
Set Contrast control fully clockwise.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
10.	.001mfd	High side to point (B). Low side to chassis.	4.5MC (400∿ 30% AM)	Any non-interfering channel	DC probe thru detector probe (Fig. 2) to pin 7 (cathode) of picture tube. Common to chassis.	A8	Adjust for MINIMUM deflection on VTVM.

SOUND IF ALIGNMENT

Tune in a weak station signal (antenna disconnected) and adjust for best picture. Do not change setting of Fine Tuning during balance of alignment.
Connect the antenna for a strong signal. Adjust A9 for maximum sound. Use peak furthest counterclockwise.
Disconnect antenna. Adjust A10, All for maximum sound.
Connect antenna. Retouch A9 for maximum sound.

FIG. 1

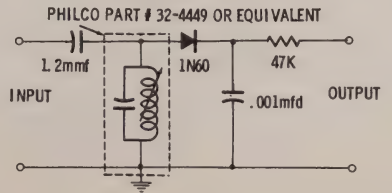
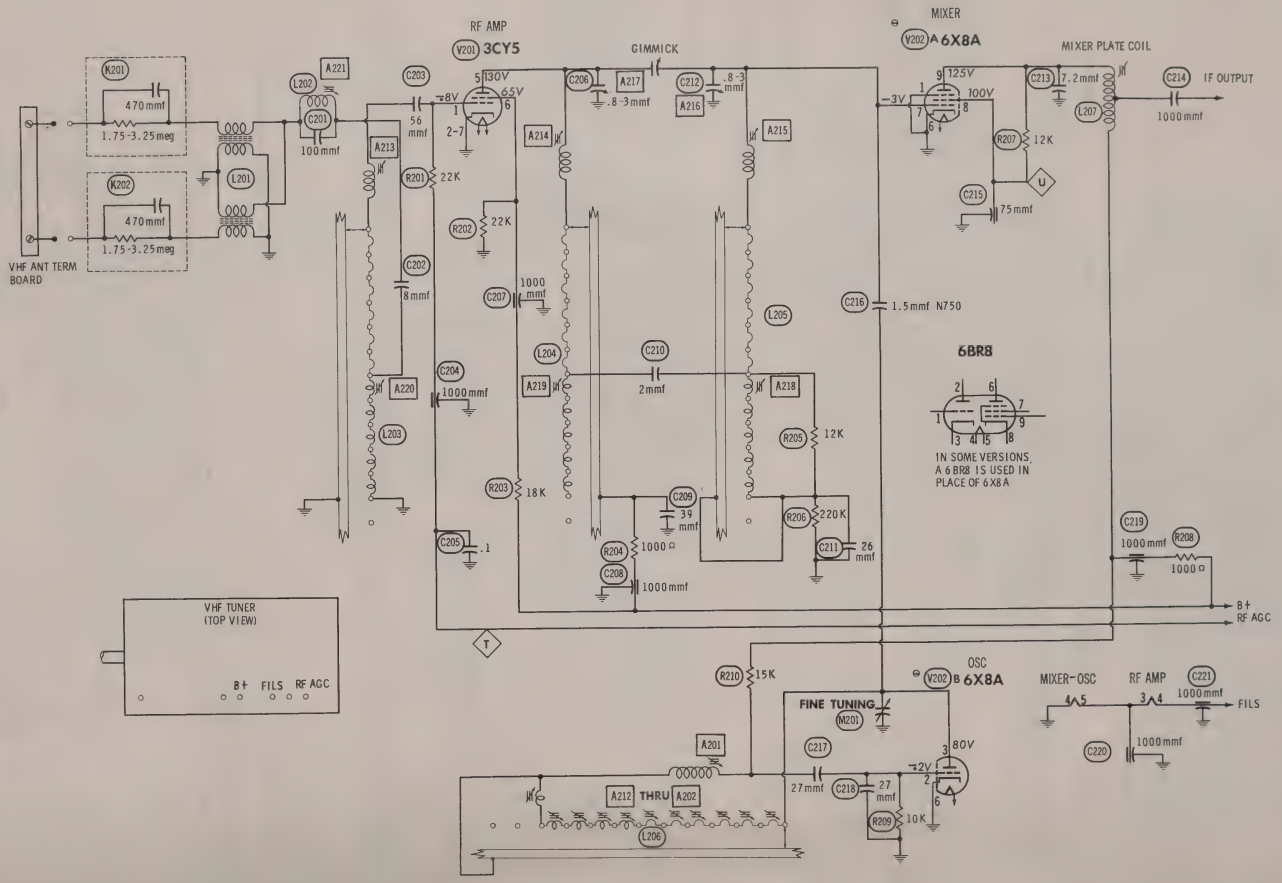


FIG. 2



A PHOTOFACT STANDARD NOTATION SCHEMATIC

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VHF TUNER T-102

REMOTE TUNING PARTS LIST AND DESCRIPTIONS

MISCELLANEOUS

ITEM No.	PART NAME	PHILCO PART No.	NOTES
	Tubing	L3543-3	15 ft. Plastic
	Tubing	L3543-2	Cylinder to Coupling
	Wheel	[illegible]	Stepper
	Plunger	76-12042-1	Hand Control
	Cylinder	76-11560	Assembly
	Piston	76-10990-1	Assembly
	Switch	42-2105	Remote Off

CABINETS & CABINET PARTS

(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

DESCRIPTION	PART NO.	MODEL NO.	J3049L	U3049L	J3208	J3210PL	U3210PL	J3212AQ	U3212AQ	J3212G	U3212G	J3212GL	U3212GL	J3214SG	J3214WL	U3216SG	U3216WL
Safety Glass	54-6683-1		X	X													
Safety Glass	54-5918-1				X	X	X	X	X	X	X	X	X	X	X	X	X
Mask	54-6678-4		X	X													
Knob-VHF Channel Selector	424-8183		X	X											X		
Knob " "	424-8179				X			X	X	X	X	X	X				
Knob "	424-8178					X	X										
Knob "	424-8185													X	X	X	X
Knob-UHF Channel Selector	76-10210-3			X					X		X		X				
Knob "	76-10210-5						X									X	X
Knob-UHF Channel Indicator	54-6259-6			X													
Knob "	54-6259-9						X		X		X		X			X	X
Knob-Fine Tuning	424-8178		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Knob-Contrast	424-8181		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Knob-Volume	424-8184		X	X											X		
Knob "	424-8180				X	X	X	X	X	X	X	X	X				
Knob "	424-8186													X	X	X	X
Knob-Brightness, Vertical Hold, Horizontal Hold	424-8182		X	X	X	X	X	X	X	X	X	X	X		X		
Knob "	424-8187													X		X	X
Cabinet (Body)	76-10523-46		X														
Cabinet	76-10523-47			X													
Cabinet	76-10523-49				X												
Cabinet	76-10523-60					X											
Cabinet	76-10523-61						X										
Cabinet	76-10523-54							X									
Cabinet	76-10523-56								X								
Cabinet	76-10523-53									X							
Cabinet	76-10523-58										X						
Cabinet	76-10523-20											X					
Cabinet	76-10523-57												X				
Cabinet	76-10523-52													X			
Cabinet	76-10523-3														X		
Cabinet	76-10523-55															X	X
Handle (Strap)	76-11541-5													X		X	X
Handle (Strap)	76-11541							X	X	X	X	X	X		X		
Handle	28-12783-2				X	X	X										
Handle	28-12783-1		X	X													

VHF TUNER PARTS LIST AND DESCRIPTIONS

T-102

TUBES

ITEM No.	USE	TYPE	ITEM No.	USE	TYPE
	• GENERAL ELECTRIC •	RAYTHEON	• SYLVANIA •		
V201	RF Amp.	3CY5	V202	Mixer - Osc.	6X8A ①

① Some versions may use 6BR8A. Replace with original type.

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	REMARKS	REPLACEMENT DATA: AEROVOX PART No.	CENTRALAB PART No.	CORNELL DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C201	100		DI-100	DD-101	L10T1	CCD-101	GP310	10TS-T10
C202	8		NPO-DI 8.2	DD-080	C10V8C		GP580	10TS-V80
C203	56		SI 56	DS-560	L10Q56	CCD-560	GP456	10TS-Q56
C204	1000		EF-001	MFT-1000		CCF-102	CT280A	
C205	.1 200V		P288N-1		CUB2P1	SDP-3-104	GEM-401	2TM-P10
C206	8-3			829-3		CV-1	CT565	
C207	1000		EF-001	MFT-1000		CCF-102	CT280A	
C208	1000		EF-001	MFT-1000		CCF-102	CT280A	
C209	39		DI-39	DD-390	L10Q39	CCD-390	GP439	10TS-Q39
C210	2		NPO-SI 2.0	TCZ-2R2	C10V2C	CCTO-2R2	CNO-522	10TCC-V22
C211	68		DI-27	DD-27	L10Q27	CCD-270	GP427	10TS-Q27
C212	8-3			829-3		CV-1	CT565	
C213	7.2			DD-7R5	C10V7C			10TS-V75
C214	1000		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C215	75	#30-1268-20						
C216	1.5 N750	#30-1271-6						
C217	27		DI-27	DD-270	L10Q27	CCD-270	GP427	10TS-Q27
C218	27		DI-27	DD-270	L10Q27	CCD-270	GP427	10TS-Q27
C219	1000		EF-001	MFT-1000		CCF-102	CT280A	
C220	1000		EF-001	MFT-1000		CCF-102	CT280A	
C221	1000		EF-001	MFT-1000		CCF-102	CT280A	

Philco Part Number

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REPLACEMENT DATA: IRC PART No.	WORKMAN TV PART No	REMARKS	ITEM No.	RATING	REPLACEMENT DATA: IRC PART No.	WORKMAN TV PART No	REMARKS
R201	22K				R206	220K			
R202	22K				R207	12K			
R203	18K				R208	10000Ω			
R204	1000Ω				R209	10K			
R205	12K				R210	15K			

COMPONENT COMBINATIONS

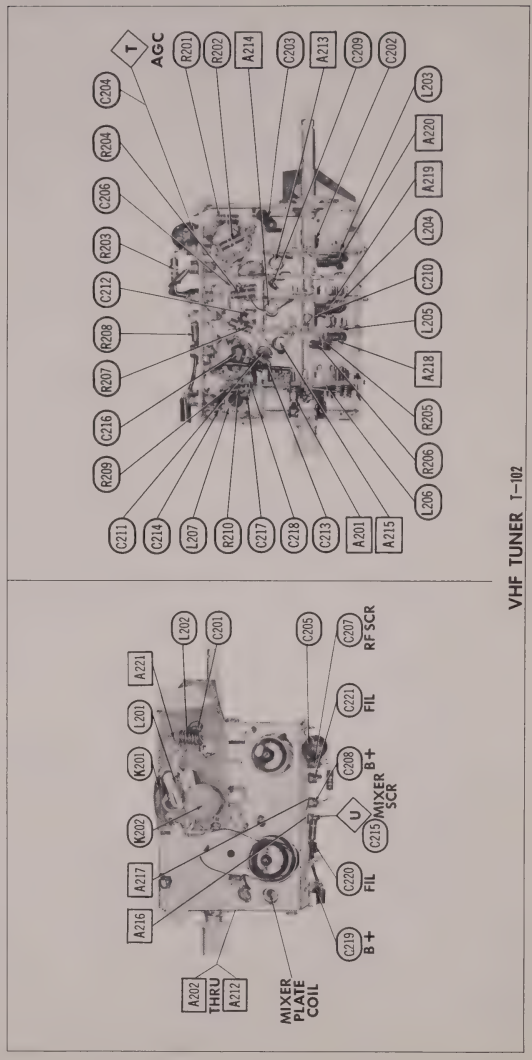
ITEM No.	USE	DESCRIPTION	PHILCO PART No.	REPLACEMENT DATA
K201	Antenna Isolation	470mmf, 1.75-3.25meg	30-6040-1	
K202	Antenna Isolation	470mmf, 1.75-3.25meg	30-6040-1	

COILS (RF-IF)

ITEM No.	USE	PHILCO PART No.	NOTES	ITEM No.	USE	PHILCO PART No.	NOTES
L201	Ant. Trans.	32-4799-1		L305	Mixer Wafer	76-11987	
L202	IF Trap	32-4852-59		L306	Osc. Wafer	76-11964	
L203	Ant. Wafer	76-11985		L307	Mixer Plate	32-4829-17	
L304	RF Wafer	76-11986					

MISCELLANEOUS

ITEM No.	PART NAME	PHILCO PART No.	NOTES
M201	Fine Tuning Capacitor	28-13348-3	
	Stator	54-5739-1	Fine Tuning
	Plate (Rotor)	28-13643-1	
	Shaft & Detent	76-11959-1	Assembly
	Sleeve	54-5776-1	Fine Tuning



PHILCO CHASSIS 11H25, 11H25U, 11J27, 11J27R, 11J27U

VHF TUNER T-102

FOLDER 2

PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	GENERAL ELECTRIC • USE	GENERAL ELECTRIC • TYPE	ITEM No.	RAYTHEON • USE	RAYTHEON • TYPE	ITEM No.	SYLVANIA • USE	SYLVANIA • TYPE
V1	1st Video IF Amp.	4BZ6	V7	Audio Output	12AE6	V13	6V Rectifier	1G3GT/1B3GT
V2	2nd Video IF Amp.	4BZ6	V8	Vert. Mult. - Vert Output	12DR7			
V3	3rd Video IF Amp. - Video Detector	6AJ8 ①	V9	Horiz. Mult.	6AU7			
V4	Video Output - Noise Inv.	8AW8A	V10	Horiz. Output	17DQ6B			
V5	Sound IF Amp - Sync Sep.	6CG8A	V11	Damper	17D4			
V6	Audio Detector	4C9S						

① Chassis 11H25 uses 6AM8A in this application.

PICTURE TUBE

ITEM No.	REPLACEMENT DATA: PHILCO PART No.	GENERAL ELECTRIC PART No.	RCA PART No.	RAYTHEON PART No.	SYLVANIA PART No.	NOTES
V13	19ABP4 17DRP4				17DRP4 ①	① Silver Screen "85"

ELECTROLYTIC CAPACITORS

ITEM No.	RATING: CAP	RATING: VOLT	REPLACEMENT DATA: PHILCO PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	NOTES
C1	125	300	30-2585-78	AFH-31-25	C1185	FP123	TMS-1550	TVL-1470 *	
C2A	▲140	350	30-2590-41	AFH54-112-05 ▲	D3695-7	WP423.5		TVL-4705.9 *	
B	▲100	300			BR10035				
C	▲10	450							
D	20	300							
C3A	▲20	300	30-2590-30	AFH3-177-80	XC0733.4	WP326.35		TVL-3580.10*	
B	▲100	300							
C	100	50							

* Not normally in distributor's stock. Available thru distributor on order to manufacturer.

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	REMARKS	REPLACEMENT DATA: AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	FUMEMCO PART No.	CENTRALAB PART No.	MALLORY PART No.	SPRAGUE PART No.
C4	3.3		NPO-DI 3.3	DTZ-3R3	C10Y33C	CCTO-3R3	CNO-533		10TCC-V33
C5	.5-3		#31-6535-1	539-3		CV-1			
C6	.5-3		#31-6535-1	539-3		CV-1			
C7	1-5		#31-6535-2	539-5		CV-3			
C8	1-5		#31-6535-2	539-5		CV-3			
C9	1000		BPD-001	DD-102	BYA10DI	CCD-102	B-210		5HK-D10
C10	.22 200V		P268N-33		CUB22P3	2DP-4-224	GEM-3022		2TM-P23
C11	680		BPD-00068	DD-681	BYA10T68	CCD-681	B-368		10TS-T68
C13	470 10%		DL-470	DD-471	S8ST47	CCD-471	GP347		10TS-T47
C13	1000		BPD-001	DD-102	BYA10DI	CCD-102	B-210		5HK-D10
C14	680		BPD-00068	DD-681	BYA10T68	CCD-681	B-368		10TS-T68
C15	47 10%		DL-27	DD-270	L10Q27	CCD-270	GP427		10TS-Q27
C16	680		BPD-00068	DD-681	BYA10T68	CCD-681	B-368		10TS-T68
C17	1000		BPD-001	DD-102	BYA10DI	CCD-102	B-210		5HK-D10
C18	5		NPO-DI 5.0	DTZ-4R7	C10Y5C	CCTO-050	CNO-547		10TCC-V50
C19	330		DL-330	L10Y33	L10Q33	CCD-331	B-333		10TS-T33
C20	25000			DPMS8525	1DP-1-253	GEM-6125	5HK-S25		
C21	8200	(5800 10%) *	DAC-38	DD-823	L10D83	CCD-823	B-382		BL-D80
C22	.047 400V		P488N-047	DD-503	CUB4S47	4DP-3-473	GEM-4147		47M-S47
C23	47		DL-47	DD-470	L10Q47	CCD-470	GP447		10TS-Q47
C24	1000		BPD-001	DD-102	BYA10DI	CCD-102	B-210		5HK-D10
C25	680		BPD-00068	DD-681	BYA10T68	CCD-681	B-368		10TS-T68
C26	.1 200V		P288N-1	DF-104	CUB2P1	2DP-3-104	GEM-301		2TM-P10
C27	1000		BPD-001	DD-102	BYA10DI	CCD-102	B-210		5HK-D10
C28	1000		BPD-001	DD-102	BYA10DI	CCD-102	B-210		5HK-D10
C29	27 10%		DL-27	DD-270	L10Q27	CCD-270	GP427		10TS-Q27
C30	8200		DAC-38	DD-823	L10D83	CCD-823	B-382		BL-D80
C31	18000		BPD-02	DD-203	BYB682	CCD-303	B-120		5HK-S20
C32	1000		BPD-001	DD-102	BYA10DI	CCD-102	B-210		5HK-D10
C33	.0068 400V		P488N-0068	DS-682	CUB6D68	6DP-1-683	GEM-6368		6TM-D68
C34	.0033 600V		P488N-0033	DS-332	CUB6D33	6DP-1-332	GEM-6333		6TM-D33
C35	.1 400V		P488N-1	DF-104	CUB4P1	4DP-3-104	GEM-401		4TM-P10
C36	50000		BPD-05	DQ-503	H-0535	1DP-2-503	GP150		5HK-S50
C37	.0015 1000V		P1068N-0015	DD-152	CUB10X15	10DP-2-152	GEM-10215		10TM-D15
C38	3300		DL-4000	DD-392	L10D39	CCD-392	GP239		10TS-D39
C39	.0039 600V 10%		P684CM-0039		DPM6D39	6DP-1-392	JL-339		6PS-D39
C40	300 10%		1469-00039		S8T239	CM-15B-391K	MC8243		M2-339
C41	18000		BPD-02	DD-303	BYB682	CCD-303	GP120		5HK-S20
C42	.018 600V 10%	(.022 10%) *	V84C622-10%		P18S22	6DP-2-203	GEM-1812		6TM-S20
C43	120 5000V 10% ①	#30-1246-36							
C44	1000		BPD-001	DD-102	BYA10DI	CCD-102	B-210		5HK-D10
C45	1000		BPD-001	DD-102	BYA10DI	CCD-102	B-210		5HK-D10
C46	1000		BPD-001	DD-102	BYA10DI	CCD-102	B-210		5HK-D10
C47	1000		BPD-001	DD-102	BYA10DI	CCD-102	B-210		5HK-D10
C48	1500		BPD-0015	DD-152	BYA10D15	CCD-152	B-215		5HK-D15
C49	.1 600V		P688N-1	DF-104	CUB6P1	6DP-4-104	GEM-601		6TM-P10

* Philco Part Number. * Used in Chassis 11H25.

‡ Chassis 11H25 uses 150mmf, 5000V, 10% in this application (Part #30-1246-15).

CONTROLS

ITEM No	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: PHILCO PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	1.25meg		33-5592-48	F1-53			▲UE4113-8	Contrast
B	2.5meg			R2-48	RTV-680			Volume
C	Switch			KR-1				Power Off-On
R2A	15K	2(WW)	33-5574-7	WW-153	AS8-15K	WPK15000	R15ML	Width
B	Shaft			Not Req.	FK8-1/4	Not Req.	Not Req.	
R3A	350K		33-5592-57 ‡	F1-40	RTV-730	▲/◆U-1538	▲	Vert. Hold
B	1.4meg			R2-79				Height
R4A	40K		33-5592-43	F1-29	RTV-731	▲/◆U-1260	▲UE4114	Horiz. Hold
B	250K			R2-34				Horiz. Hold Centering

CONTROLS (cont)

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: PHILCO PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	INSTALLATION NOTES
R5A	250K		33-5592-34	F1-34	RTV-732		*	Brightness
B	1200Ω			R2-6				Vert. Linearity

① Some versions may use Part #33-5592-55.

† "CONCENTRIKIT" Equivalent: K-8 Kit with Base Elements and Shafts: Bil-132, P17-108 (Panel) (Not available as a factory assembled unit). Bil-240, R15-006 (Rear) R8 (Bushing)

◆ "CONCENTRIKIT" Equivalent: K-8 Kit with Base Elements and Shafts: Bil-132, P17-108 (Panel) (Not available as a factory assembled unit). Bil-130, R15-005 (Rear) R8 (Bushing)

■ "STA-LOC" Equivalent: FA255R, RU255L, OS125, IK525, U942.
▲ "STA-LOC" Equivalent: FB45L, RU45L, OS187, IK525.
◆ "STA-LOC" Equivalent: FB54L, RU254L, OS187, IB437.
* "STA-LOC" Equivalent: FA254L, RU152L, OS187, IK525.

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REPLACEMENT DATA: IRC PART No.	REPLACEMENT DATA: WORKMAN TV PART No.	REPLACEMENT DATA: REMARKS
R6	22K			
R7	330Ω			
R8	1000Ω			
R9	2200Ω			
R10	27K			
R11	330Ω			(1.2meg) *
R12	330Ω			(330K) *
R13	68Ω			
R14	15K			
R15	330Ω			
R16	220Ω			
R17	680K			
R18	10K			
R19	33K 1W			(2.2meg) *
R20	68Ω			
R21	1meg			
R22	18K			
R23	5100Ω			
R24	18000Ω 1W			
R25	4200Ω 4W	PW5-4200	SW-8Q-4200	
R26	180K			
R27	220K			
R28	220K			
R29	15K			
R30	1500Ω			
R31	6800Ω 2W			
R32	15K 1W			
R33	330Ω			
R34	1meg			
R35	820K			(68K, 2W) ①
R36	220Ω 1W			

ITEM No.	RATING	REPLACEMENT DATA: IRC PART No.	REPLACEMENT DATA: WORKMAN TV PART No.	REPLACEMENT DATA: REMARKS
R37	82Ω			
R38	220K			
R39	150K			
R40	3300Ω			
R41	220K			
R42	1meg			(330K) *
R43	470K			
R44	6.8meg			
R45	270K			
R46	68K 1W			
R47	1.5meg			
R48	330Ω 1W			
R49	6.8meg			
R50	1.5meg			(2.2meg) *
R51	15K 1W			
R52	1200Ω			
R53	47K			
R54	68000Ω 3W	PW3-6800	3W-8Q-6800	
R55	180Ω			(220Ω) *
R56	180Ω			(220Ω) *
R57	9Ω (Cold) ②			
R58	4700Ω			(22K) *
R59	68K 2W			
R60	33K 1W			(56K) *
R61	5.6Ω (Fusible) FRS.6		BS8.6	#33-1368-3
R62	10Ω (4000 Cold)③			#33-1343-17
R63	4700Ω 1W			
R64	1500Ω			
R65	47Ω			
R66	4700Ω			(5600Ω) *

① Alternate Value.
② May not be used in Chassis 11H25.
③ 3.5Ω (230Ω Cold) used in UHF Versions (Pt. #33-1343-12).

* Value used in Chassis 11H25.
# Philco Part Number.

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	PHILCO PART No.	REPLACEMENT DATA	
K1	Sync Sep. Grid	270mmf, 8000mmf, 680K, 680K, 1meg	30-6540-1		
K2	Vert. Integrator	150mmf, 4000mmf, 5000mmf, 22K, 27K, 90K	30-6030-9	Sprague	V-27
K3	Horiz. AFC	82mmf, 300mmf, 1000mmf, 47000mmf, 82K, 180K, 680K, 1.2meg	30-6035-3	Sprague	HN-7
K4	Horiz. Mult. Plate	470mmf, 1000mmf, 3300mmf, 5600Ω, 6800Ω, 39K, 470K, 560K, 2.7meg	30-6541-2 ①		
K5	Isolation	1500mmf, 1.75-3.25meg	30-6040-2	Centralab Sprague	PC-377 PRC-19

① Some versions may use Part #30-6541-1.

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA: PHILCO PART No.	Merit PART No.	Miller PART No.	Stancor PART No.	Workman TV PART No.	NOTES
L1	47.25MC Trap (1.5uh)	32-4645-45	BC-662	4604	RTC-8516	T856	① Used in Chassis 11J27, includes R18 (10K).
L2	47.25MC Trap (2.6uh)	32-4645-19	BC-563	4606	RTC-8517	T857	② Used in Chassis 11H25, Includes 6800Ω Resistor.
L3	41.25MC Trap (3uh)	32-4645-34					③ Used in Chassis 11J27.
L4	last IF Grid (.68uh)	32-4645-36	TV-189	6175	RTC-8610	T855	④ Used in Chassis 11H25.
L5	1st Video IF	32-4686-2					
L6	2nd Video IF	32-4686-3					
L7	3rd Video IF	32-4686-3					
L8	RF Choke (32uh)	32-4674-1	TV-192	6152	RTC-8594	T336	
L9	RF Choke (3uh)	32-4645-44	BC-564	4608	RTC-8518	T858	
L10	Peaking (470uh)	32-4762-12	TV-203	6136	RTC-8590	T352	
L11A	4.5MC Trap	32-4688-10					
B	1st Sound IF						
L12	Peaking (330uh)	32-4769-4 ①	TV-200	6132	RTC-8517	T349	
	Peaking (560uh)	32-4769-3 ②	TV-204	6144	RTC-8581	T354	
L13	Peaking (220uh)	32-4762-8 ③	TV-197	6154	RTC-8586	T345	
	Peaking (330uh)	32-4762-10 ④	TV-200	6132	RTC-8517	T349	
L14	2nd Sound IF	32-4745-2	TV-157	6370-PC		T255	
L15	Quadrature	32-4644-20					
L16	RF Choke (9uh)	32-4112-62	BC-566	4612	RTC-8522	T860	
L17	RF Choke (9uh)	32-4112-62	BC-566	4612	RTC-8522	T860	
L18	Fil. Choke (2.9uh)	32-4645-35	SW-630	4606	RTC-8517	T857	
L19	Fil. Choke (2.9uh)	32-4645-35	SW-630	4606	RTC-8517	T857	

COILS (SWEEP CIRCUITS)

ITEM No.	USE	REPLACEMENT DATA: PHILCO PART No.	Merit PART No.	Miller PART No.	Rogers PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	Workman TV PART No.
L20	Horiz. Stabilizer	32-4754-3					83-16		

FILTER CHOKE

ITEM No.	RATINGS: CURRENT (Measured)	RATINGS: DC RES.	RATINGS: INDUCTANCE @ CURRENT 1000 ^(-1)	REPLACEMENT DATA: PHILCO PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
L21	270A	40Ω	1 Hy.	32-8710-6		C-2343①	25C44	C-28X	① Drill new mounting hole(s).

TRANSFORMERS (SWEEP CIRCUITS)

ITEM No.	USE	REPLACEMENT DATA: PHILCO PART No.	Merit PART No.	Rogers PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
T1	Vert. Output	32-8940-2	A-2815 ①		DY-42A	VO-112	A-108X	
T2	Yoke (Horiz. 34MH) (11t^0) (Vert. 35MH)	32-8731-3 *	MDF-110			26875 ① Y-46		
	Yoke	76-10508-9 †						
	Rear Cover and Centering Device	76-11644-1 & 76-11644-6 or						
T3	Horiz. Output	32-8855-5 ▲					D-175	
	Horiz. Output	32-8855-3 †						

① Use 8 to 1 Turns Ratio.
* Chassis 11J27 (Yoke Cable Part #41-4309-4).
◆ Chassis 11H25 (Includes lead assembly).

▲ Chassis 11J27.
† Chassis 11H25.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE: PRI.	IMPEDANCE: SEC.	REPLACEMENT DATA: PHILCO PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
T4	5500Ω	3-4Ω	32-8747-3	A-3028	A-3871 ①	34S51 ①	S-6X	① Drill new mounting hole(s).

SPEAKER

ITEM No.	TYPE: SIZE	TYPE: FIELD	TYPE: V. C. IMP.	REPLACEMENT DATA: PHILCO PART No.	QUAM PART No.	NOTES
SP1	4"	PM	3-4Ω	36-1655-18	4A07	
	4"	PM	3-4Ω	36-1655-17 ①	4A1	① May be used in some versions.

POWER RECTIFIERS

ITEM No.	RATING: CURRENT (Measured)	REPLACEMENT DATA: PHILCO PART No.	RCA PART No.	SARKES TARZIAN PART No.	SYLVANIA PART No.	NOTES
M1	.270A	34-8048-2	1N1763	40H	8R500	
M2	.270A	34-8048-2	1N1763	40H	8R500	

SIGNAL DIODES

ITEM No.	ORIG. TYPE	REPLACEMENT DATA: PHILCO PART No.	GENERAL ELECTRIC PART No.	RAYTHEON PART No.	SYLVANIA PART No.	NOTES
M3	GE	34-8037 *	6GC1 *			*Dual Selenium, Common Cathode Type

MISCELLANEOUS

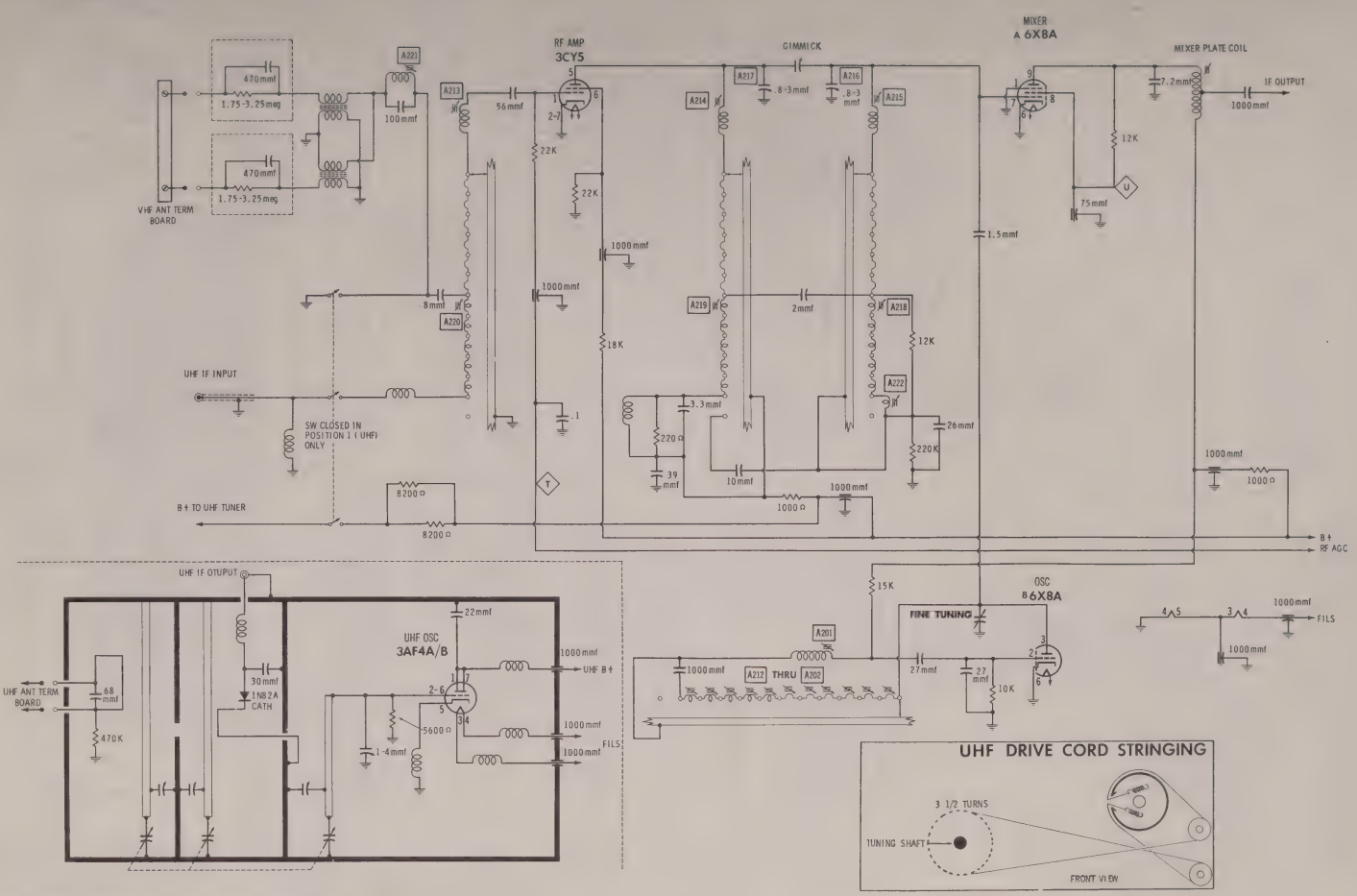
ITEM No.	PART NAME	PHILCO PART No.	NOTES
M4	Tuner (T-102)	76-1197-1	VHF, Chassis 11H25 & 11J27
	Tuner (T-103)	76-12094-1	VHF with UHF Provisions, Ch. 11H25U & 11J7U
	Tuner (T-28G)	76-10887-2	UHF
M5	Antenna Assembly	76-11538-1	JFD REPLACEMENT Type #TA386 (for each single pole), Models UJ32UPL, UJ32UPL, UJ32AQ, G, GL, UJ32A2AQ, G, GL, UJ32A6G, WL, UJ32J6SG, WL
	Antenna (Monopole)	76-10734-5	JFD REPLACEMENT Type #TA385, Models UJ3049L, UJ3049L
	Antenna (Monopole)	76-10734-7	JFD REPLACEMENT Type #TA385, Model UJ3049

WIRING DATA

High Voltage Lead	Use BELDEN No. 8869
Shielded Hook-up Wire	Use BELDEN No. 8885 (Single Conductor) 8735 (Two Conductor)
General-use Unshielded Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in Ten Colors 8524 (Stranded) Available in Ten Colors
Power Cord (Interlock Type)	Use BELDEN No. 8874
300Ω Tuner Input Lead	Use BELDEN No. 8225
300Ω Antenna Lead-in	Use BELDEN No. 8230 or 8275
Antenna Rotor Cable	Use BELDEN No. 8464 (Flat) or 8484 (Round) - 4 Conductor 8485 (Round) - 5 Conductor 8486 (Round) - 8 Conductor

PHILCO CHASSIS 11H25, 11H25U, 11J27, 11J27R, 11J27U

FOLDER 2



A PHOTOFACT STANDARD NOTATION SCHEMATIC

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UHF TUNER T-28G

VHF TUNER WITH UHF PROVISIONS T-103

TUNER ALIGNMENT INSTRUCTIONS

Use an ISOLATION TRANSFORMER to PROTECT the Test Equipment.
Allow a 20 minute warm-up period for the receiver and test equipment.
Suggested Alignment Tools: A201 thru A204, A210 thru A214 ..... GENERAL CEMENT #5009, 8195, 8274, 8275, 8728, 8987
WALSCO #2531
A208, A209 ..... GENERAL CEMENT #5004, 5008, 5009
WALSCO #2520
Mixer Plate Coil ..... GENERAL CEMENT #8606, 8606L, 8282, 9295
WALSCO #2526, 2543, 2544, 2545

VHF OSCILLATOR ALIGNMENT

Set Fine Tuning to mid-range.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
1.	Two 120Ω Carbon Resistors	Across VHF antenna terminals with 120Ω in each lead.	209.75MC (400∿ 30% AM Mod.)	13	Across Video Det. load.	A201	Adjust for MINIMUM 400∿ indication.
2.	"	"	203.75MC 197.75MC 191.75MC 185.75MC 179.75MC 173.75MC	12 11 10 9 8 7	"	A202, A203, A204, A205, A206, A207	"
3.	"	"	81.75MC 75.75MC	6 5	"	A208 A209	"
4.	"	"	65.75MC 59.75MC	4 3	"	A210 A211	"
5.	"	"	53.75MC	2	"	A212	"

VHF RF AND MIXER ALIGNMENT

Connect the negative lead of a 2.5 volt bias supply to point Ⓣ. Positive to chassis.
Connect a 10 to 20mmf capacitor across Mixer Plate Coil.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
6.	Two 120Ω Carbon Resistors	Across VHF antenna terminals with 120Ω in each lead.	213MC (10MC Swp)	211.25MC 215.75MC	13	Vert. Amp. to point Ⓓ. Low side to chassis.	A213, A214, A215	Coils not containing adjustable cores are adjusted by expanding or compressing coil turns. Adjust for maximum gain and symmetry of response similar to Fig. 201 with markers as shown.
7.	"	"	177MC	175.25MC	7	"	A216, A217	Adjust to obtain correct tilt on top of curve as in Fig. 202 to compensate for the tuning effect of channel 13.
8.	"	"	213MC	213MC	13	"		Retouch A214 and A215 for symmetrical response centered about marker. To retouch compress or expand cores SLIGHTLY. Repeat steps 7 and 8 alternately until optimum response is obtained on channels 7 & 13.
9.	"	"	85MC	85MC	6	"	A218, A219, A220	Turn A218 counterclockwise until a single peak appears. (DO NOT unscrew far enough to allow the core to fall out.) Adjust A219 until peak falls at 85MC. (It may be necessary to increase sweep generator output). Adjust A220 for maximum amplitude and symmetry of single peak.
10.	"	"	"	83.25MC 87.75MC	"	"		Retouch A218 and A219 for response similar to Fig. 203.
11.	"	"	"	43.5MC (400∿ 30% AM Mod.)	4	Vert. Amp. across Video Detector Load	A221	Adjust for MINIMUM scope indication.

UHF IF ALIGNMENT

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
12.	Two 120Ω Carbon Resistors	Across UHF antenna terminals with 120Ω in each lead.	Not used	43.5MC (440∿ 30% AM Mod.)	UHF	Vert. Amp. to point Ⓓ. Low side to chassis.	A222	Adjust for a symmetrical response.

UHF ALIGNMENT

This portion of the receiver has been properly aligned at the factory and is very stable. Alignment of this portion should not be required in the field.

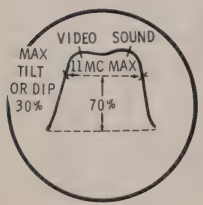


FIG. 201

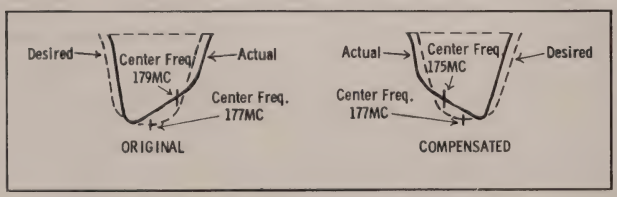


FIG. 202

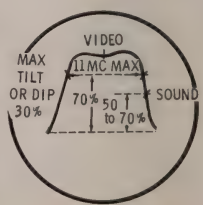


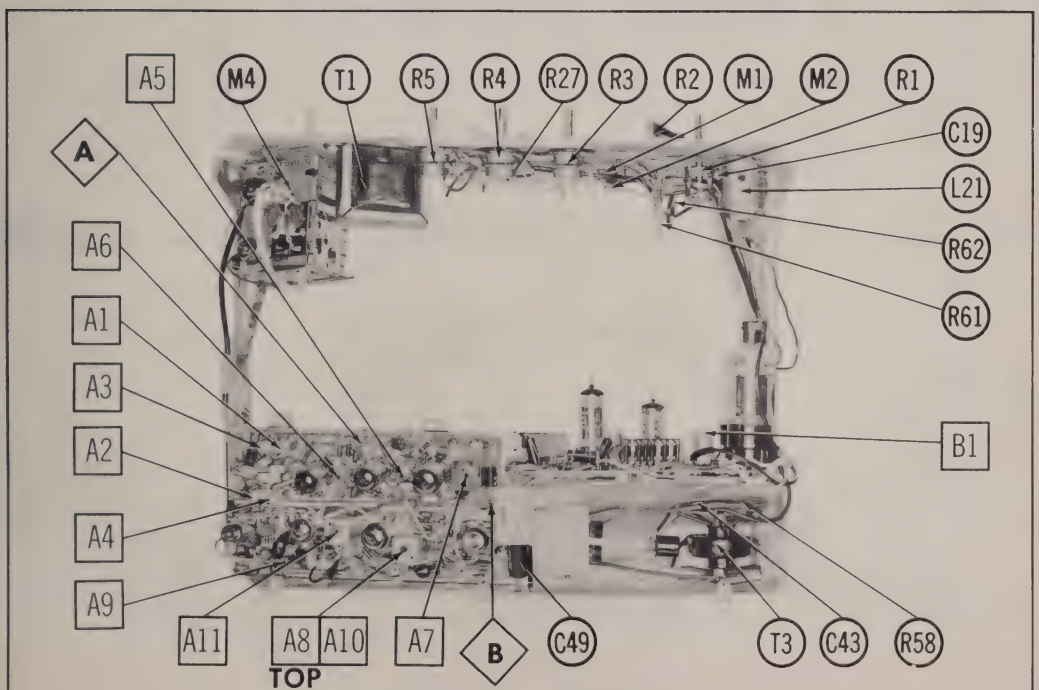
FIG. 203

RESISTANCE MEASUREMENTS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	4BZ6	• 1meg	47Ω	54Ω	57Ω	†5200Ω	†5200Ω	0Ω		
V2	4BZ6	• 1meg	68Ω	57Ω	60Ω	†5200Ω	†5200Ω	0Ω		
V3	6HJ8	220Ω	.1Ω	†5700Ω	60Ω	64Ω	†5700Ω	.1Ω	3300Ω	0Ω
V4	8AW8A	5100Ω	2.6meg	†24K	30Ω	36Ω	68Ω	680K	†4700Ω	†5700Ω
V5	6CG8A	1.6meg	†40K	0Ω	36Ω	40Ω	†19K	†19K	0Ω	220K
V6	4CS6	3.4Ω	330Ω	40Ω	43Ω	†180K	†1100Ω	3.7Ω		
V7	12ED5	†4800Ω	450K	43Ω	54Ω	NC	†260Ω	†580Ω		
V8	13DR7	†310Ω	NC	1.9meg	30Ω	18Ω	•†2meg	• 420K	0Ω	•750Ω
V9	9AU7	†16K	1.8meg	1200Ω	10Ω	10Ω	†46K	• 100K	1200Ω	18Ω
V10	17DQ6B	NC	80Ω	NC	•†9000Ω	800K	NC	95Ω	0Ω	TOP CAP †13Ω
V11	17D4	NC	NC	†100K	NC	†40Ω	NC	64Ω	80Ω	
V12	1G3GT 1B3GT	PINS 1 THRU 8 HAVE INFINITE RESISTANCE								TOP CAP †410Ω
V13	19ABP4	10Ω	•†3meg	10Ω	0Ω	NC	•†3meg	• 200K	6Ω	
V201	3CY5	• 1.4meg	0Ω	5Ω	6Ω	†5700Ω	†16K	0Ω		
V202	6X8A	0Ω	10K	†20K	0Ω	5Ω	0Ω	220K	†17K	†5700Ω
ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9

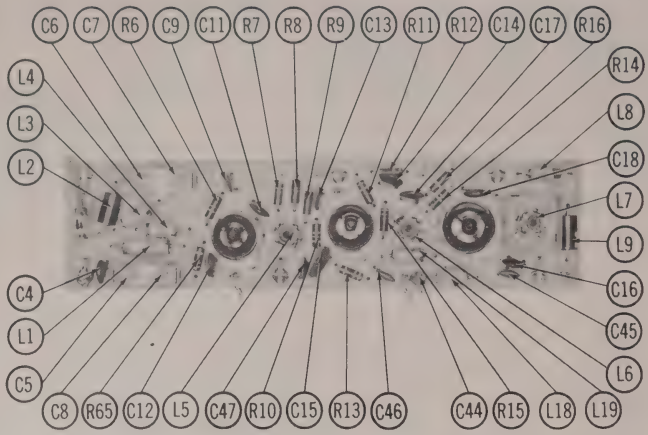
• THIS READING WILL VARY. CONTROL SET FOR NORMAL OPERATION.
† MEASURED FROM OUTPUT OF M1.
† MEASURED FROM PIN 3 OF V11.

NC NO CONNECTION

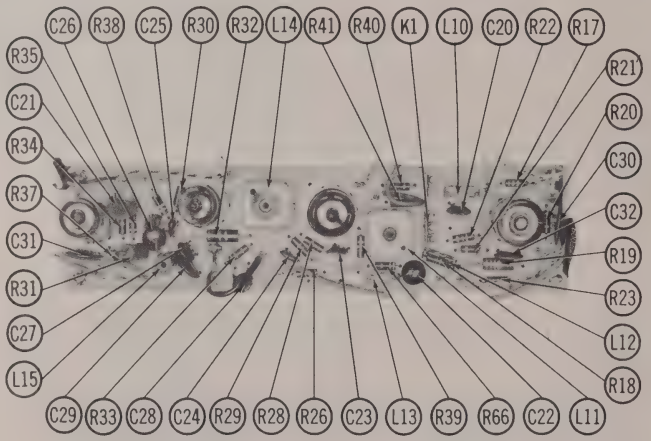


CHASSIS—REAR VIEW

VIDEO IF

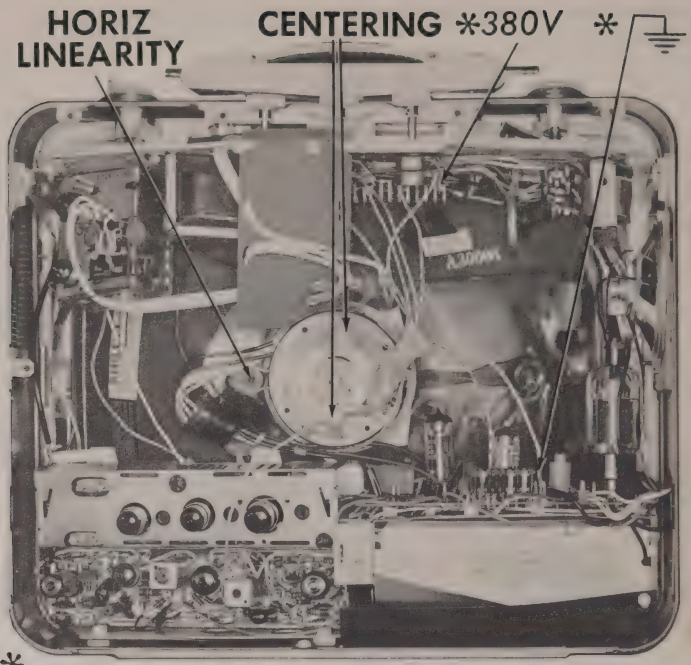


VIDEO SOUND SYNC



PRINTED BOARDS

CHASSIS-FRONT VIEW



CABINET—REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Turn the set on and tune in a station signal. Allow the receiver to warm up. Connect a clip lead across the Horizontal Stabilizer Coil (L20).

Set the Horizontal Hold Control to the center of its range.

Adjust the Horizontal Hold Centering Control until the picture appears to float back and forth across the screen.

Remove the clip lead from across L20 and adjust the Horizontal Stabilizer (Freq.) Coil Slug (B1) until the picture synchronizes horizontally.

DISASSEMBLY INSTRUCTIONS

CHASSIS 11H25

PICTURE TUBE REMOVAL

1. Remove rear cover.
2. Remove 5 screws (3 at bottom, 1 on each side) holding front bezel (with safety glass). Remove bezel and safety glass.
3. Disconnect high voltage lead, picture tube socket, and yoke leads.
4. Remove 4 screws (from front) supporting picture tube bracket to chassis.
5. Remove picture tube out front.

WRAP-AROUND CABINET REMOVAL

1. Remove rear cover.
2. Remove 5 screws (3 at bottom, 1 on each side) holding front bezel (with safety glass).
3. Remove knobs.
4. Remove 5 screws from bottom of cabinet and 1 on each side.
5. Remove 2 screws from the rear top bracket. Remove bracket.
6. Remove 5 screws from front (top).
7. Disconnect speaker leads.
8. Remove wrap-around cabinet.

CHASSIS 11J27

BEZEL AND PICTURE TUBE ASSEMBLY REMOVAL

1. Remove rear cover.
2. Remove 5 screws in front bezel (1 on each side and 3 at bottom).
3. Remove picture tube socket, yoke plug and high voltage lead.
4. Remove bezel and picture tube assembly out front (includes safety glass, bezel, and picture tube).

WRAP-AROUND CABINET REMOVAL

1. Follow steps 1 thru 4 of "Picture Tube Assembly Removal".
2. Remove knobs at top of cabinet.
3. Disconnect speaker leads.
4. Remove 5 screws from bottom of cabinet and 1 screw on each side of cabinet.
5. Remove 2 screws from the rear top bracket. Remove bracket.
6. Remove 5 screws at top (front) of cabinet.
7. Remove wrap-around cabinet.

PHOTOFACT® Folder with CIRCUITRACE®

**ADMIRAL CHASSIS
4E3A, 4L2B, 4N3**

ADMIRAL CHASSIS
4E3A, 4L2B, 4N3

MODEL Y1189A

ADMIRAL CHASSIS
4E3A, 4L2B, 4N3

TRADE NAME	Admiral Models Y1189A (Ch. 4E3A); Y3037, Y3038 (Ch. 4N3); 4L26B, 4L27B, 4L28B, 4L29B (Ch. 4L2B)
MANUFACTURER	Admiral Sales Corp., Service Div., 903 Morrissey Drive, P. O. Box 845, Bloomington, Illinois
TYPE SET	AC Operated 4 Tube AM Receiver With Electric Clock (Models 4L Series do not Include Clock)
POWER SUPPLY	110 – 120 Volts AC, 60 Cycles RATING 26 Watts, .24 Amp. @117 Volts AC (Less Clock)
TUNING RANGE—BROADCAST	535 – 1620KC

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading.

Suggested Alignment Tools: A1, A2.....GENERAL CEMENT #5009, 8195, 8274, 8275, 8728, 8729, 8987, 8988, 8989
WALSCO #2515, 2531, 2532
A3, A4.....GENERAL CEMENT #5004, 5008, 5009
WALSCO #2520

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	High side thru .1mfd to pin 1 (grid) of Converter. Low side to chassis.	455KC (400~ Mod.)	Tuning gang fully open.	Across voice coil.	A1, A2	Adjust for maximum output.
2.	"	1620KC	"	"	A3	"
3.	Loop	1400KC	1400KC Signal.	"	A4	Adjust for maximum output while rocking tuning gang.

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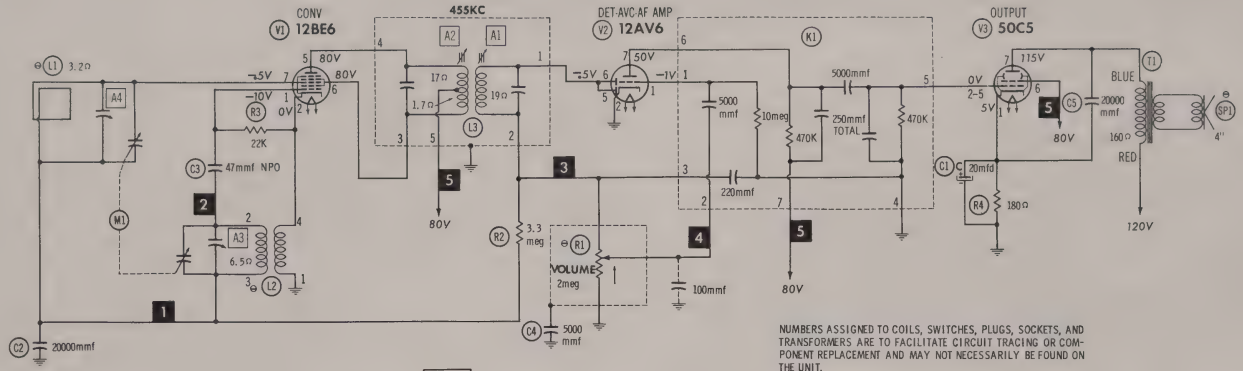
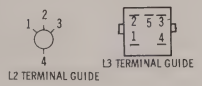
KG441

SET 531 FOLDER 3



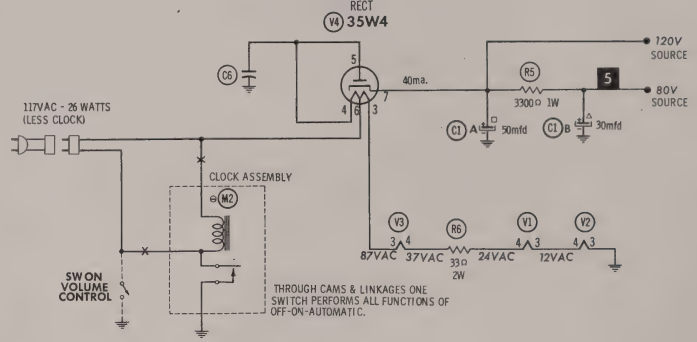
NUMBERS ASSIGNED TO COILS, SWITCHES, PLUGS, SOCKETS, AND TRANSFORMERS ARE TO FACILITATE CIRCUIT TRACING OR COMPONENT REPLACEMENT AND MAY NOT NECESSARILY BE FOUND ON THE UNIT.



RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V1	12BE6	22K	0Ω	10Ω	25Ω	†3300Ω	†3300Ω	5.3meg
V2	12AV6	10meg	0Ω	0Ω	10Ω	2meg	2meg	†470K
V3	50C5	180Ω	NC	120Ω	58Ω	470K	†3300Ω	†160Ω
V4	35W4	NC	NC	120Ω	163Ω	163Ω	160Ω	¶

¶ THIS READING WILL VARY DEPENDING UPON THE CONDITION OF THE ELECTROLYTIC IN THE CIRCUIT.
† MEASURED FROM PIN 7 OF V4.
NC NO CONNECTION



Θ SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION (CONTROL VIEWED FROM SHAFT END)

1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured with 1000 ohm per volt voltmeter.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common ground.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

A PHOTOFACT STANDARD NOTATION SCHEMATIC with CIRCUITRACE®

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ADMIRAL CHASSIS 4E3A, 4L2B, 4N3

PARTS LIST AND DESCRIPTIONS

WIRING DATA

General-use Unshielded Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in Ten Colors 8524 (Stranded) Available in Ten Colors
Power Cord (Interlock Type)	Use BELDEN No. 8874

TUBES

• GENERAL ELECTRIC •			• RAYTHEON • SYLVANIA •		
ITEM No.	USE	TYPE	ITEM No.	USE	TYPE
V1	Converter	12BE6	V3	Output	50C5
V2	Det. -AVC-AF Amp.	12AV6	V4	Rectifier	35W4

ELECTROLYTIC CAPACITORS

ITEM No.	RATING CAP.	RATING VOLT.	REPLACEMENT DATA ADMIRAL PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	NOTES
C1A	■50	150	67D30-3	PWH3-81-50	C0560 ‡	PFP311,12	TMT-3078†	PCL-3440.5	
B	▲30	150							
C	20	25							

‡ Use Printed Circuit Adapters #55277 & 55278.
† Use Printed Circuit Adapter Kit TMA.

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	REMARKS	REPLACEMENT DATA AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C2	20000		BPD-02	DD-203	BYB6S2	CCD-203	B-120	5HK-S20
C3	47 NPO		NPO-D1 47	DTZ-47	C10Q47C	CCTO-470	CNO-447	10TCC-Q47
C4	5000		BPD-005	DD-502	BYA10D5	CCD-502	B-250	5HK-D50
C5	5000		BPD-005	DD-502	BYA10D5	CCD-502	B-250	5HK-D50
C6	20000		BPD-02	DD-203	BYB6S2	CCD-203	B-120	5HK-S20

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA ADMIRAL PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	INSTALLATION NOTES
R1	2meg	½	75C25-16				P2-26A	Volume Note 1

Note 1. Chassis 4N3 uses Part #75C-25-17
Chassis 4L2B uses Part #75D25-6 (Includes Switch)

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REPLACEMENT DATA IRC PART No.	REPLACEMENT DATA WORKMAN TV PART No.	REMARKS
R2	3.3meg			
R3	22K			
R4	180Ω			

ITEM No.	RATING	REPLACEMENT DATA IRC PART No.	REPLACEMENT DATA WORKMAN TV PART No.	REMARKS
R5	3300Ω 1W			
R6	33Ω 2W			

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	ADMIRAL PART No.	REPLACEMENT DATA
K1	Audio Coupling	220mmf, 250mmf, (2) 5000mmf, (2) 470K, 10meg	63C 6-20	Aerovox PA-306 Centralab PC-159 Sprague DT-6

PRINTED BOARD

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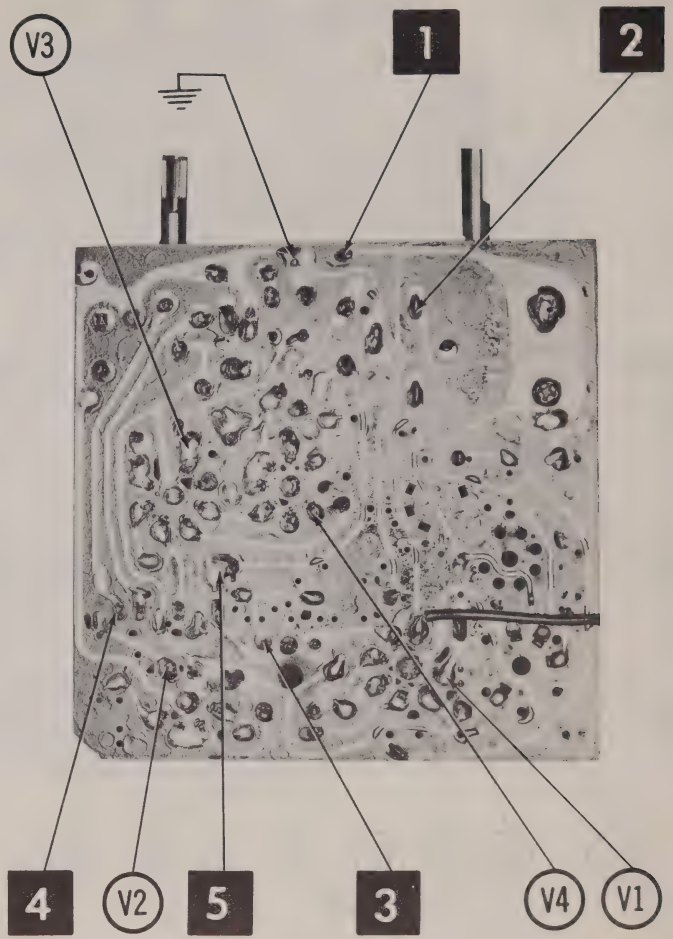
ARROWS INDICATING TUBE LOCATIONS ARE POINTING TO PIN 1



PARTS LIST AND DESCRIPTIONS (Continued)

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA					NOTES
		ADMIRAL PART No.	Merit PART No.	Miller PART No.	Stancor PART No.	Workman TV PART No.	
L1 L2 L3	Loop Ant. Osc. IF	69C 242-2 ① 69B 215-5 ② 72C 175-2					① Part #A8500 used in Chassis 4N3. Part #A7754 used in Chassis 4L2B(includes cabinet back and AC interlock) ② Part #69C215-5 used in Chassis 4L2B.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
	PRI.	SEC.	ADMIRAL PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T1	2700Ω	3-4Ω	(Part of SP1)	A-3025	A-3332	24S53	S-12X	

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP.	ADMIRAL PART No.	QUAM PART No.	
SP1	4" 4" 4"	PM PM PM	3-4Ω	78B94-2 * 78B94-4 ♦ 78B142-4 †	4A07	* Includes T1, Model Y1189A ♦ Includes T1, Models 4L Series. † Includes T1, Models Y3037, Y3038

MISCELLANEOUS

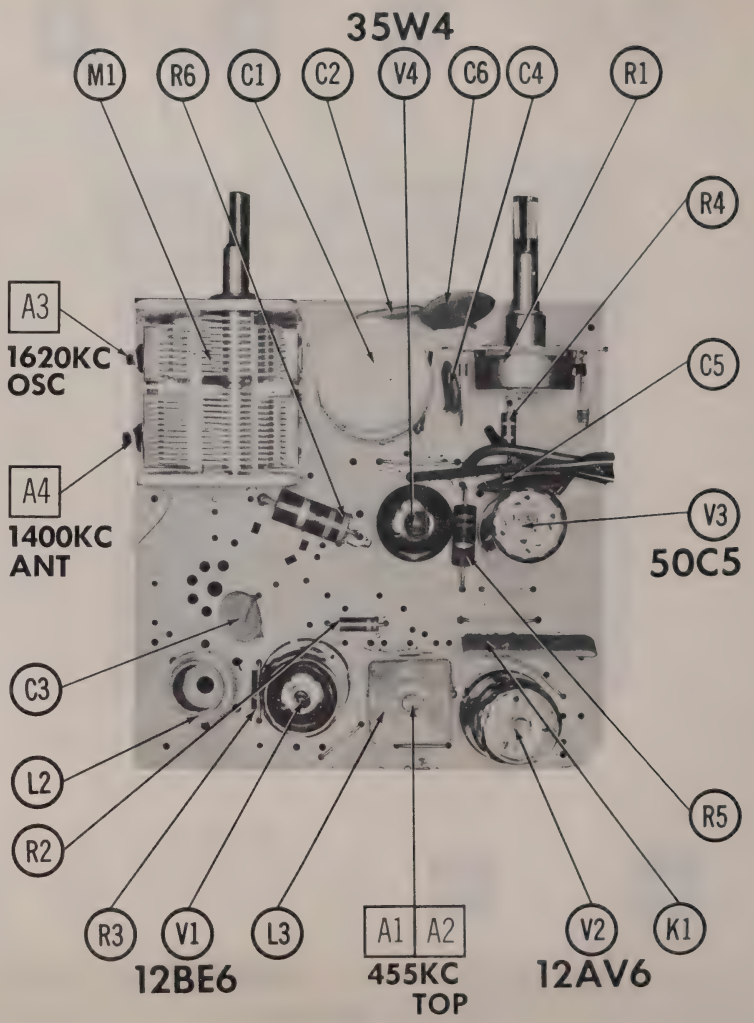
ITEM No.	PART NAME	ADMIRAL PART No.	NOTES
M1	Tuning Cap.	68C 78-3	2 Gang, Chassis 4E3A
	Tuning Cap.	68C 78-2	2 Gang, Chassis 4L2B
	Tuning Cap.	68C 78-6	2 Gang, Chassis 4N3
M2	Clock Ass'y.	91C 28-1	Model Y1189A
	Clock Ass'y.	91C 38-1	Models Y3037, Y3038
	Printed Board	14E 270-3	Less All Components

CABINETS & CABINET PARTS

(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

NAME	PART NO.	DESCRIPTION
Knob	33C133-21	Tuning, Models 4L Series
Knob	33C133-19	Tuning, with Insert, Models 4L Series
Knob	33C226-4	Tuning, Model 1189A
Knob	33C439-1	Tuning, Models Y30 Series
Knob	33C133-22	Volume, Models 4L Series
Knob	33C133-20	Volume, with Insert, Model 4L Series
Knob	33A252-2	Volume, Model Y1189A
Knob	33C395-3	Volume, Model Y30 Series
Knob	91C28-10	Clock, Model Y1189A
Knob	91C38-10	Clock, Models Y30 Series
Crystal	24A24-1	Clock, Model Y1189A
Crystal	24C32-3	Clock, Black Numbers, Model Y30 Series
Crystal	24C32-1	Clock, White Numbers, Model Y30 Series
Cabinet	34D111-15	Model 4L26B
Cabinet	34D111-17	Model 4L27B
Cabinet	34D111-16	Model 4L28B
Cabinet	34D111-18	Model 4L29B
Cabinet Front	34D151-15	Model Y30 Series
Cabinet Front	34D130-10	Model Y1189A
Cabinet Rear	34D129-40	Model Y3037
Cabinet Rear	34D129-41	Model Y3038
Cabinet Rear	34D129-25	Model Y1189A

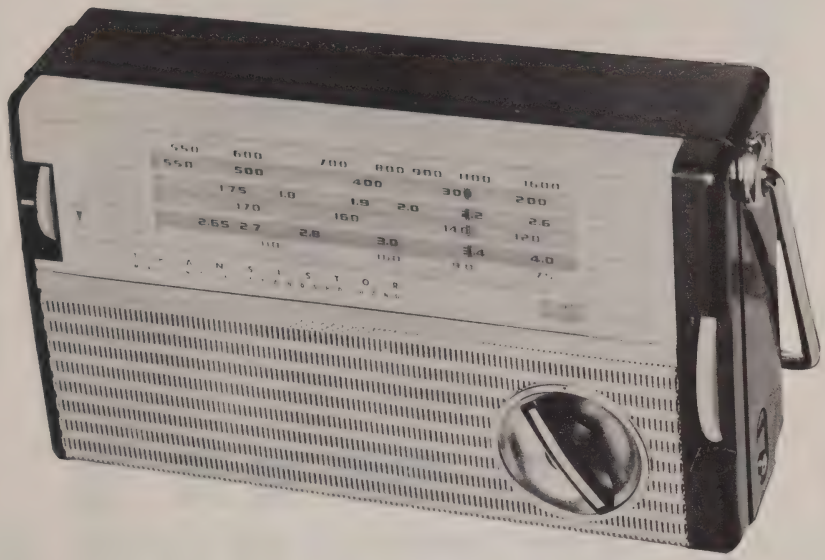
CHASSIS—TOP VIEW



PHOTOFACT® Folder with CIRCUITRACE®

CONTINENTAL MODEL MB-7

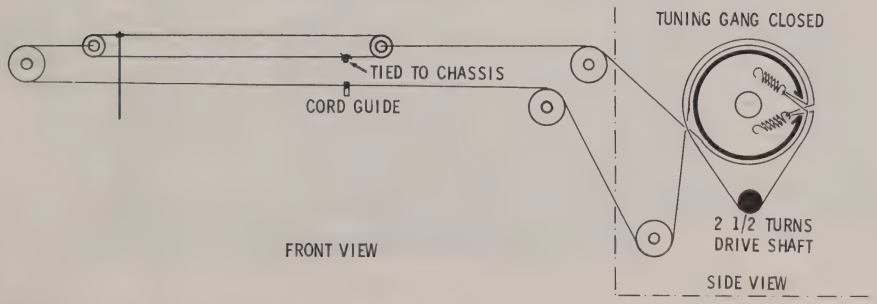
CONTINENTAL
MODEL MB-7



CONTINENTAL
MODEL MB-7

TRADE NAME	Continental Model MB-7		
IMPORTER	Continental Merchandise Co., Inc., 236 Fifth Ave., New York 1, N. Y.		
TYPE SET	Battery Operated Transistorized Portable BC-SW Receiver		
POWER SUPPLY	9 Volts DC	RATING	7MA @ 9 Volts DC (No Signal, Min. Volume) 15MA @ 9 Volts DC (Signal, Normal Volume)
TUNING RANGE	BROADCAST 525—1605KC	SHORT WAVE#1 1.7 — 2.68MC	SHORT WAVE #2 2.6—4.1MC

DIAL CORD STRINGING



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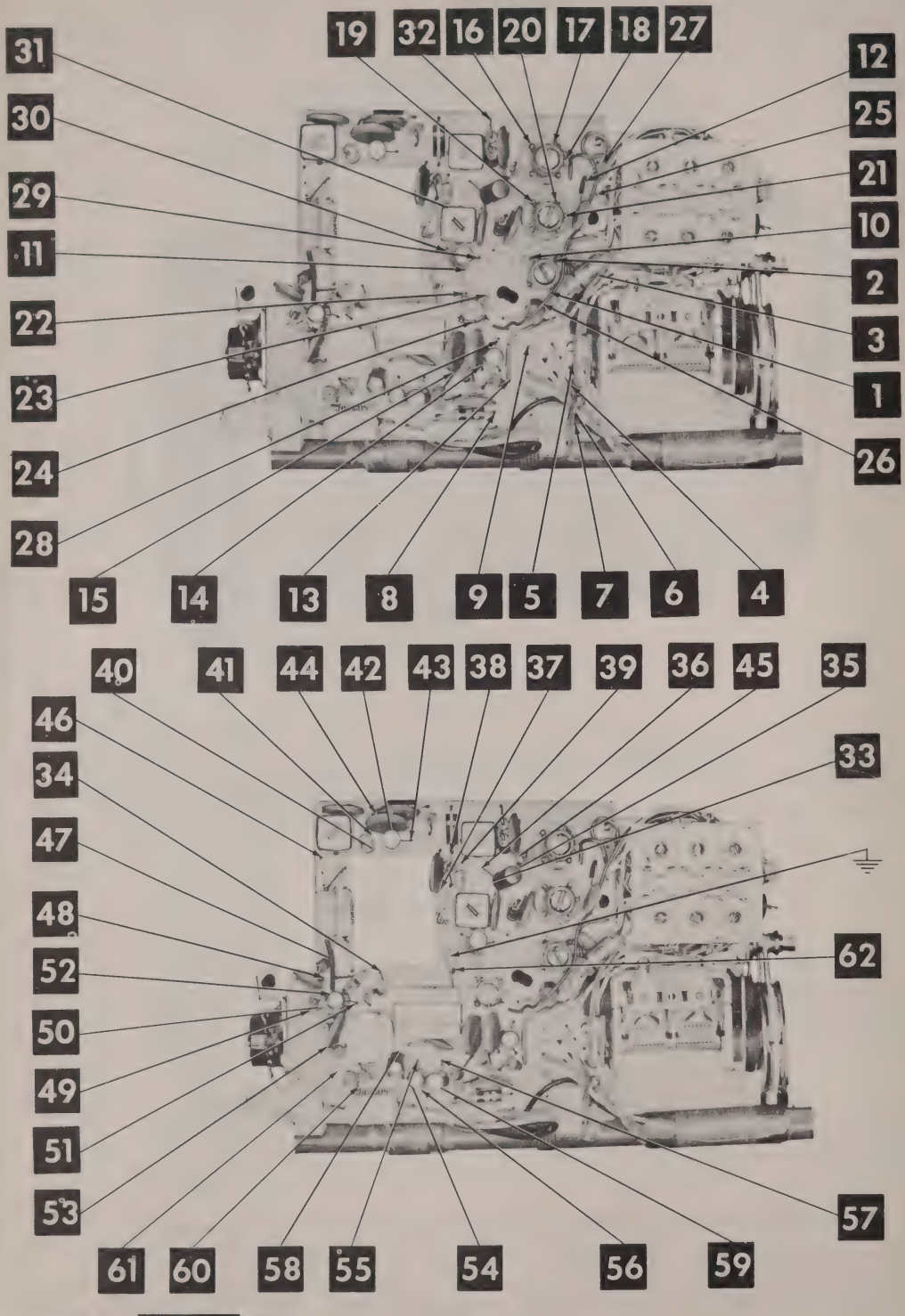
KF382

SET 531 FOLDER 4



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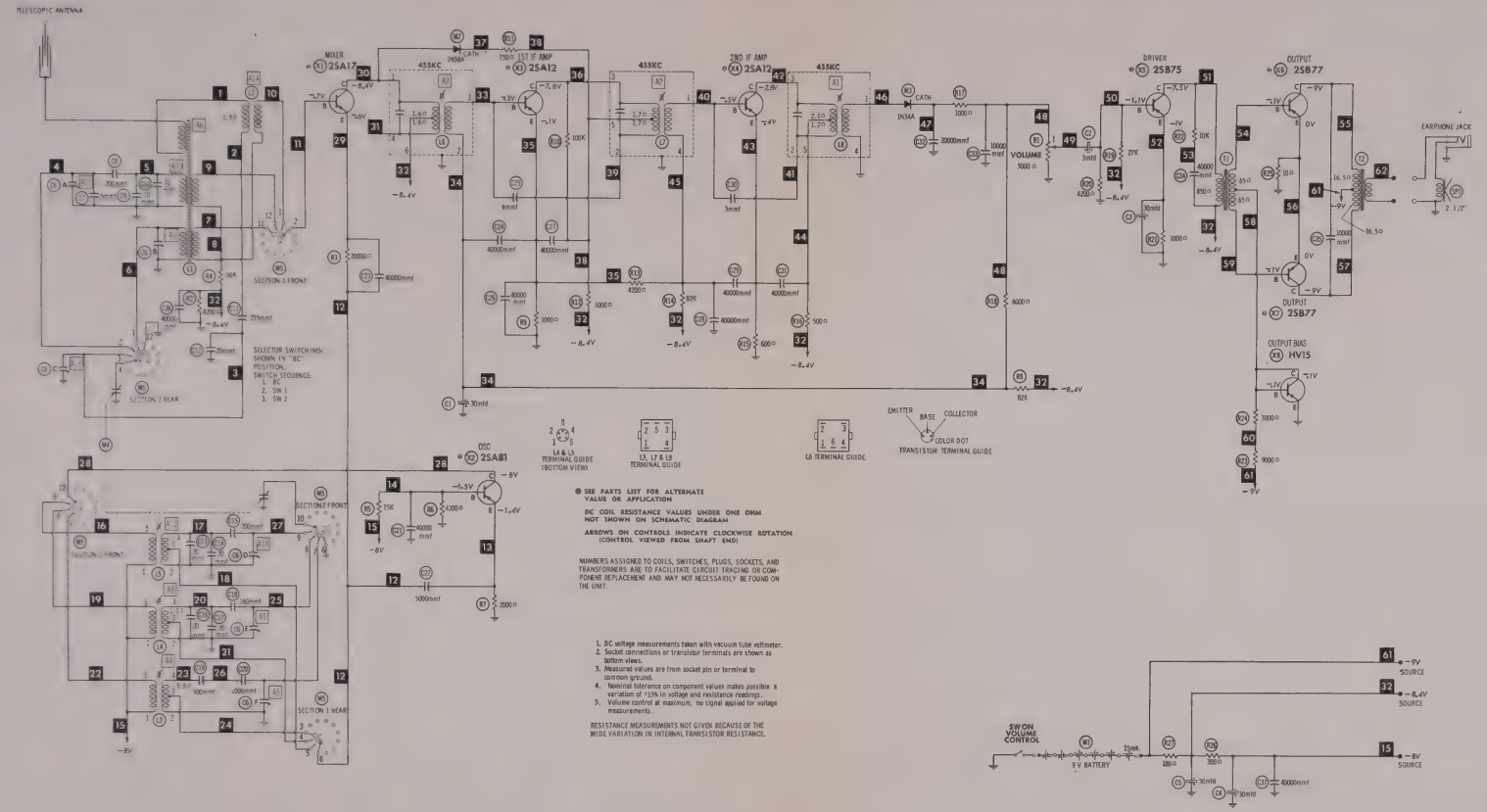
PRINTED BOARD



● SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION (CONTROL VIEWED FROM SHAFT END)

NUMBERS ASSIGNED TO COILS, SWITCHES, PLUGS, SOCKETS, AND TRANSFORMERS ARE TO FACILITATE CIRCUIT TRACING OR COMPONENT REPLACEMENT AND MAY NOT NECESSARILY BE FOUND ON THE UNIT.

1. DC voltage measurements taken with vacuum tube voltmeter.
2. Socket connections or transistor terminals are shown as bottom views.
3. Measured values are from socket pin or terminal to common ground.
4. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
5. Volume control at maximum, no signal applied for voltage measurements.

RESISTANCE MEASUREMENTS NOT GIVEN BECAUSE OF THE WIDE VARIATION IN INTERNAL TRANSISTOR RESISTANCE.

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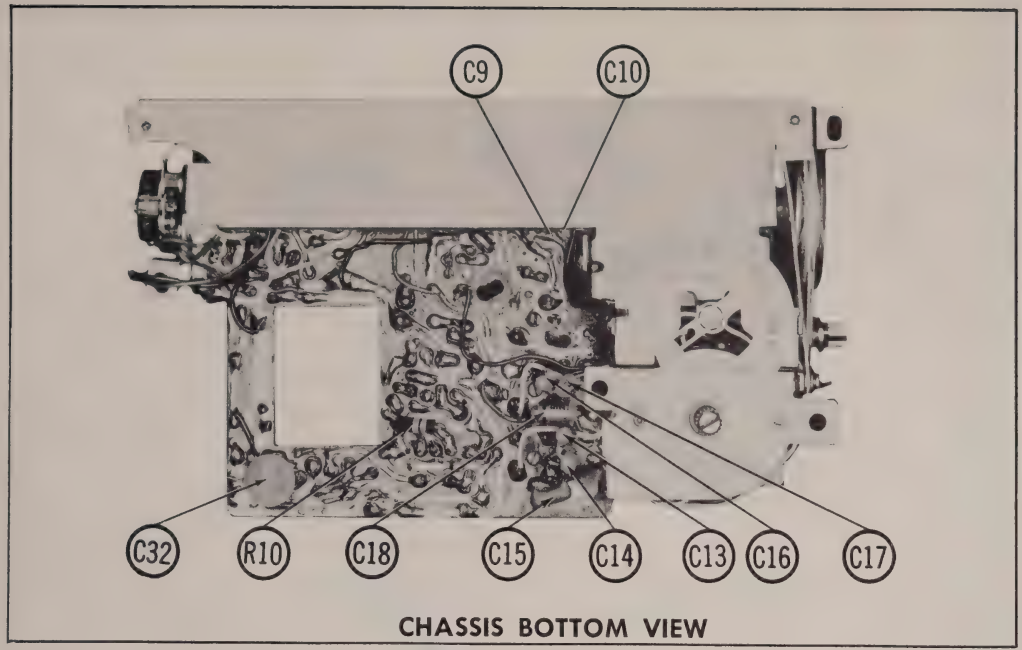
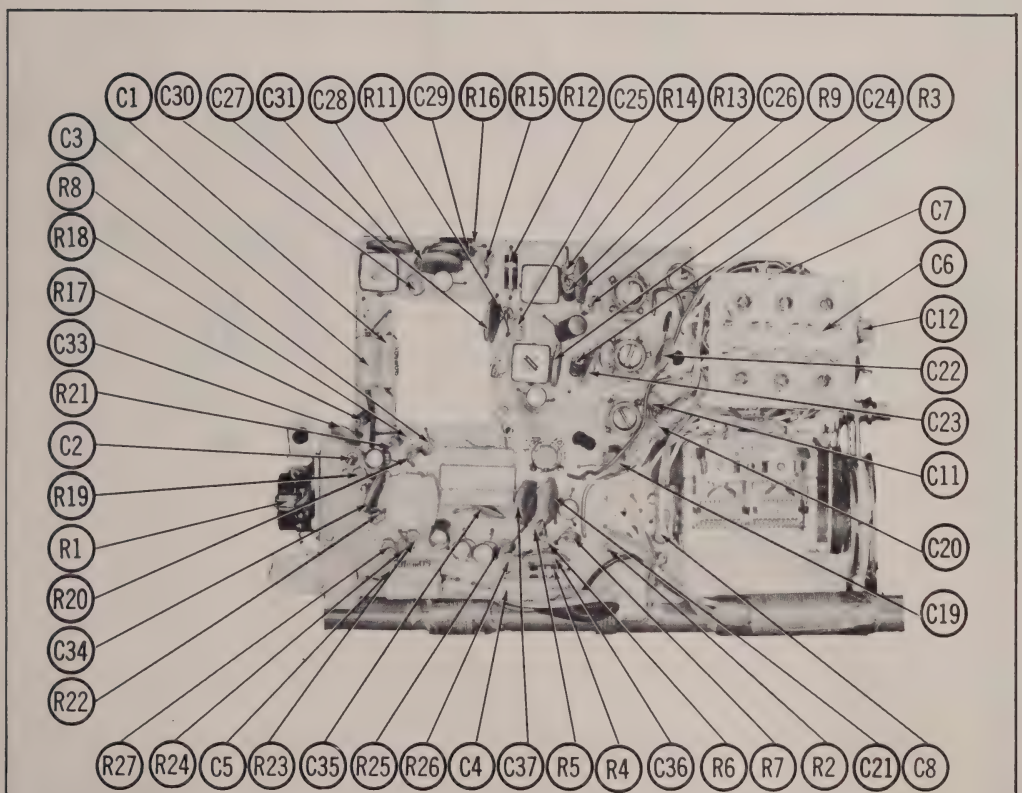
CONTINENTAL MODEL MB-7



CHASSIS BOTTOM VIEW



CHASSIS BOTTOM VIEW-CAPACITOR AND RESISTOR IDENTIFICATION

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading.

Suggested Alignment Tools:

A1, A2, A3..... GENERAL CEMENT #5004, 5008, 5009
WALSCO #2520

A4, A8, A12..... GENERAL CEMENT #5004, 5009, 8195, 8274, 8275, 8607, 8728, 8987, 8988, 8989, 9291
WALSCO #2515, 2520, 2522, 2523, 2531, 2532, 2534, 2537, 2538

A5, A7, A9, A11, A13, A15... GENERAL CEMENT #5000, 5003, 8276, 8290
WALSCO #2512, 2515, 2522, 2523, 2525, 2537

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	Loop	455KC (400∿ Mod.)	(BC) Tuning gang fully open.	Across voice coil.	A1, A2, A3	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
2.	"	525KC	Tuning gang fully closed.	"	A4	"
3.	"	1605KC	Tuning gang fully open.	"	A5	"
4.	"	600KC	600KC Signal.	"	A6	"
5.	"	1400KC	1400KC Signal.	"	A7	"
6.	"	1.7MC	(SW1) Tuning gang fully closed.	"	A8	"
7.	"	2.68MC	Tuning gang fully open.	"	A9	"
8.	"	1.8MC	1.8MC Signal.	"	A10	"
9.	"	2.5MC	2.5MC Signal.	"	A11	"
10.	"	2.6MC	(SW2) Tuning gang fully closed.	"	A12	"
11.	"	4.1MC	Tuning gang fully open.	"	A13	"
12.	"	2.7MC	2.7MC Signal.	"	A14	"
13.	"	4.0MC	4.0MC Signal.	"	A15	"

PARTS LIST AND DESCRIPTIONS

TRANSISTORS

ITEM No.	ORIG. TYPE	USE	REPLACEMENT DATA			NOTES
			RCA PART No.	RAYTHEON PART No.	SYLVANIA PART No.	
X1	2SA17	Mixer		2N486		PNP
	HJ60 *	Mixer		2N486		PNP
X2	2SA81	Oscillator		2N485		PNP
	HJ71 *	Oscillator		2N485		PNP
X3	2SA12	1st IF Amplifier	2N218	2N483	2N218	PNP
	2N218 *	1st IF Amplifier	2N218	2N483	2N218	PNP
X4	2SA12	2nd IF Amplifier	2N218	2N483	2N218	PNP
	2N218 *	2nd IF Amplifier	2N218	2N483	2N218	PNP
X5	2SB75	Driver	2N407	2N362	2N104	PNP
	2N215 *	Driver	2N407	2N362	2N104	PNP
X6	2SB77	Output	2N407	2N631	2N217	PNP
	2N217 *	Output	2N407	2N631	2N217	PNP
X7	2SB77	Output	2N407	2N631	2N217	PNP
	2N217 *	Output	2N407	2N631	2N217	PNP
X8	HV15	Output Bias	1N2326	1N295		

* Alternate

ELECTROLYTIC CAPACITORS

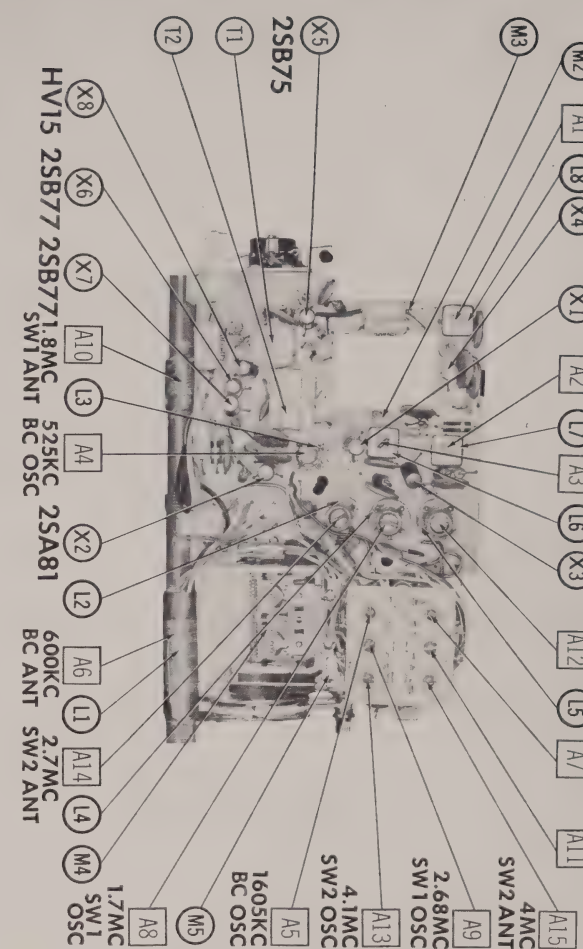
ITEM No.	RATING		REPLACEMENT DATA						NOTES
	CAP.	VOLT.	Continental PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	
C1	30	6		PTT6030	NLW30-6	TT6X30	ML30-6	TE-1092	
C2	3	10		PTT10003	NLW3-25	TT12X3	MLV5-12	TE-1122	
C3	30	6		PTT6030	NLW30-6	TT6X30	ML30-6	TE-1092	
C4	30	10		PTT10030	NLW30-15	TT15X30	MLV25-10	TE-1158	
C5	50	10		PTT10050	NLW50-10	TT10X50	ML50-12	TE-1119	

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C6A								
B								
C								
D								
E								
F								
C7	5		NPO-SI 5	TCZ-4R7	C10V5C	CCTO-050	CNO-547	10TCC-V50
C8	200		SI 200	D6-201	L10T2	CCD-201	GP320	10TS-T20
C9	10		SI 10	D6-100	L10Q1	CCD-100	GP410	10TS-Q10
C10	10		SI 10	D6-100	L10Q1	CCD-100	GP410	10TS-Q10
C11	235		SI 240	D6-251	L10T24	CCD-251	GP324	10TS-T24
C12	20		SI 20	D6-200	L10Q2	CCD-200	GP420	10TS-Q20
C13	20		SI 20	D6-200	L10Q2	CCD-200	GP420	10TS-Q20
C14	20		SI 20	D6-200	L10Q2	CCD-200	GP420	10TS-Q20
C15	200		SI 200	D6-201	L10T2	CCD-201	GP320	10TS-T20
C16	20		SI 20	D6-200	L10T2	CCD-200	GP420	10TS-Q20
C17	20		SI 20	D6-200	L10T2	CCD-200	GP420	10TS-Q20
C18	160		SI 150	D6-150	L10T15	CCD-151	GP315	10TS-T15
C19	500		SI 500	D6-501	BYA10T5	CCD-501	B-350	10TS-T50
C20	1000		SI 1000	D6-102	BYA10D1	CCD-102	B-210	5HK-D10
C21	40000			DD-403	BYB6S4		GP140	
C22	5000		BPD-005	DD-502	BYA10D5	CCD-502	B-250	5HK-D50
C23	40000			DD-403	BYB6S4		GP140	
C24	40000			DD-403	BYB6S4		GP140	
C25	6				C10V6C			
C26	40000			DD-403	BYB6S4		GP140	
C27	40000			DD-403	BYB6S4		GP140	
C28	40000			DD-403	BYB6S4		GP140	
C29	40000			DD-403	BYB6S4		GP140	
C30	3		NPO-SI 3	TCZ-3R3	C10V3C	CCTO-3R3	CNO-533	10TCC-V33
C31	40000			DD-403	BYB6S4		GP140	

CHASSIS—TOP VIEW



CONTINENTAL
MODEL MB-7

PARTS LIST AND DESCRIPTIONS (Continued)

FIXED CAPACITORS (cont)

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C32	20000		BPD-02	DD-203	BYB6S2	CCD-203	B-120	5HK-S20
C33	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C34	40000			DD-403	BYB6S4		GP140	
C35	10000		BPD-01	DD-103	BYB10S1	CCD-103	B-110	5HK-S10
C36	40000			DD-403	BYB6S4		GP140	
C37	40000			DD-403	BYB6S4		GP140	

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	Continental PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	
R1	5000Ω	1/4						Volume & Switch

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REPLACEMENT DATA			ITEM No.	RATING	REPLACEMENT DATA		
		IRC PART No.	WORKMAN TV PART No.	REMARKS			IRC PART No.	WORKMAN TV PART No.	REMARKS
R2	4200Ω				R15	600Ω			
R3	2000Ω				R16	500Ω			
R4	50K				R17	1000Ω			
R5	15K				R18	6000Ω			
R6	4200Ω				R19	27K			
R7	2000Ω				R20	4200Ω			
R8	82K				R21	1000Ω			
R9	1000Ω				R22	10K			
R10	100K				R23	9000Ω			
R11	750Ω				R24	3000Ω			
R12	1000Ω				R25	10Ω			
R13	4200Ω				R26	300Ω			
R14	82K				R27	180Ω			

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA					NOTES
		Continental PART No.	Merit PART No.	Miller PART No.	Stancor PART No.	Workman TV PART No.	
L1A	BC Loopstick						
B	SW1 Loopstick						
C	SW2 Loop						
L2	SW2 Ant.						
L3	BC Osc.						
L4	SW1 Osc.						
L5	SW2 Osc.						
L6	1st IF						
L7	2nd IF						
L8	3rd IF						

TRANSFORMER (DRIVER)

ITEM No.	TURNS RATIO		REPLACEMENT DATA					NOTES
	PRI.	SEC.	Continental PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T1	1.8	1	PTA1408					

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
	PRI.	SEC.	Continental PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T2	900Ω CT	6-8Ω	PTO-1008		TA-25①			① Use 8Ω Secondary

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP.	Continental PART No.	QUAM PART No.	
SP1	2½"	PM	6-8Ω		25A07Z8	

BATTERIES

ITEM No.	VOLTAGE	Continental PART No.	REPLACEMENT DATA						NOTES
			BURGESS		EVEREADY		MALLORY		
			"A"	"B"	"A"	"B"	"A"	"B"	
M1	9V			930 *		1015 *		M-15R*	* 6 Required

SIGNAL DIODES

ITEM No.	ORIG. TYPE	REPLACEMENT DATA				NOTES
		Continental PART No.	GENERAL ELECTRIC PART No.	RAYTHEON PART No.	SYLVANIA PART No.	
M2	1N34A			1N34A	1N34A	Overload (Pigtail)
M3	1N34A			1N34A	1N34A	Detector (Pigtail)

MISCELLANEOUS

ITEM No.	PART NAME	Continental PART No.	NOTES
M4	Tuning Cap.		2 Gang
M5	Switch		Function Selector, Includes C6 A, B, C, D, E, & F

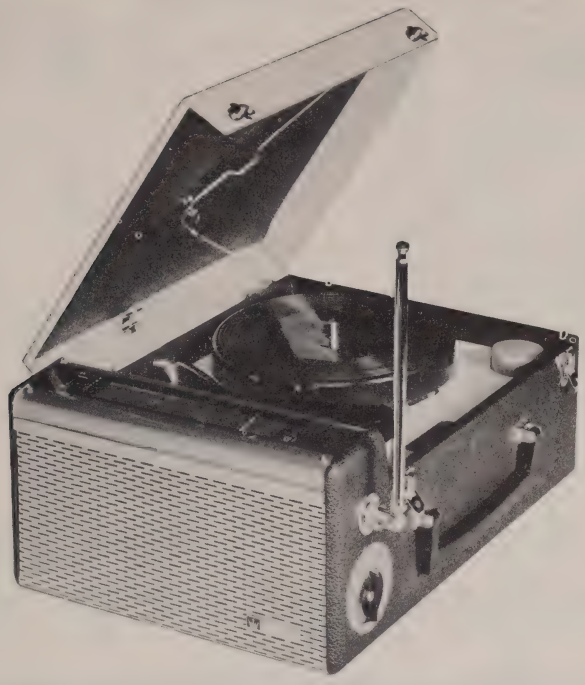
WIRING DATA

General-use Unshielded Hook-up Wire .....Use BELDEN No. 8530 (Solid) Available in Ten Colors
8524 (Stranded) Available in Ten Colors

PHOTOFACT® Folder with CIRCUITRACE®

CROWN
MODEL TRP-20

CROWN
MODEL TRP-20



CROWN
MODEL TRP-20

TRADE NAME	Crown Model TRP-20
IMPORTER	Shriro, Inc., 276 Fourth Ave., New York 10, N. Y.
TYPE SET	Battery Operated Transistorized Portable BC-SW Receiver With 3 Speed Manual Record Player
POWER SUPPLY	9 Volts DC RATING 10MA @ 9 Volts DC (No Signal, Min. Volume, Less Motor) 12MA @ 9 Volts DC (Signal, Normal Volume, Less Motor)
TUNING RANGE—BROADCAST	540 – 1600KC SHORT WAVE 4-11MC

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading.

Suggested Alignment Tools:
A1, A2, A3.....GENERAL CEMENT #8607, 9291, 9294
WALSCO #2520, 2522, 2523, 2524, 2534, 2537
A4, A5, A8, A9.....GENERAL CEMENT #5000, 5003, 5066, 8276, 8290, 9087, 9089
WALSCO #2512, 2525, 2528
A6, A10.....GENERAL CEMENT #8282, 8606, 8606-L, 9091
WALSCO #2541, 2542, 2543, 2544, 2526

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	Loop	455KC (400∿ Mod.)	(AM) Tuning gang fully open.	Across voice coil.	A1, A2, A3	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
2.	"	1600KC	1600KC	"	A4, A5	"
3.	"	600KC	600KC	"	A6, A7	Adjust for maximum output. Repeat Steps 2 and 3.
4.	"	11MC	(SW) 11MC	"	A8, A9	Adjust for maximum output.
5.	"	4MC	4MC	"	A10, A11	Adjust for maximum output. Repeat Steps 4 and 5.

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

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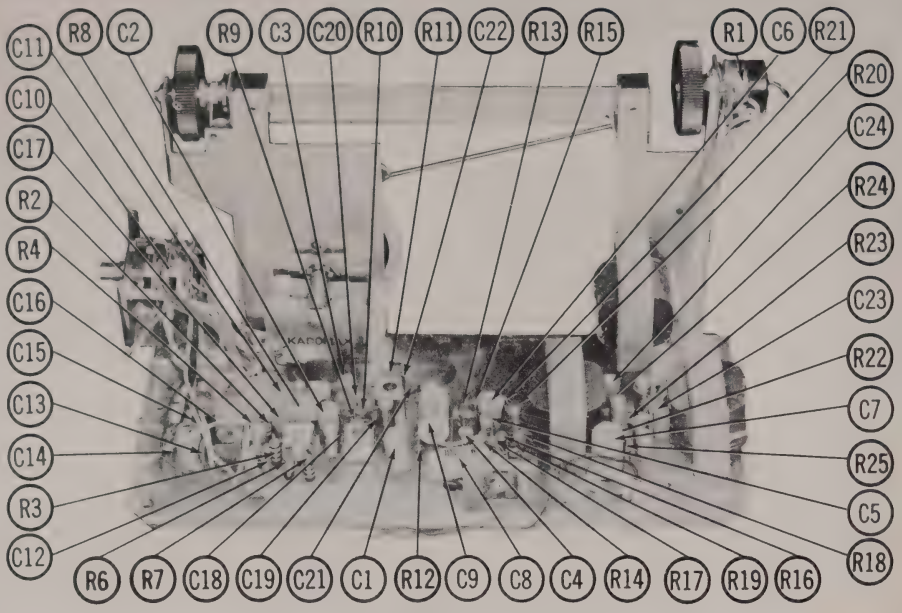
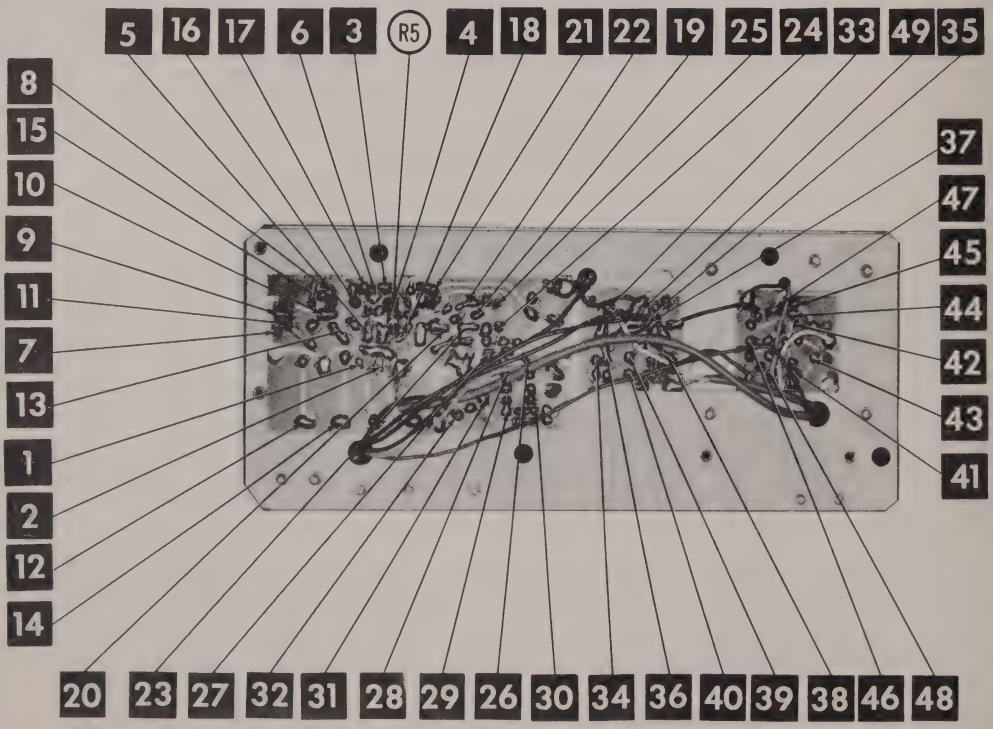
KO370

SET 531 FOLDER 5



CHASSIS TOP VIEW-CAPACITOR & RESISTOR IDENT.



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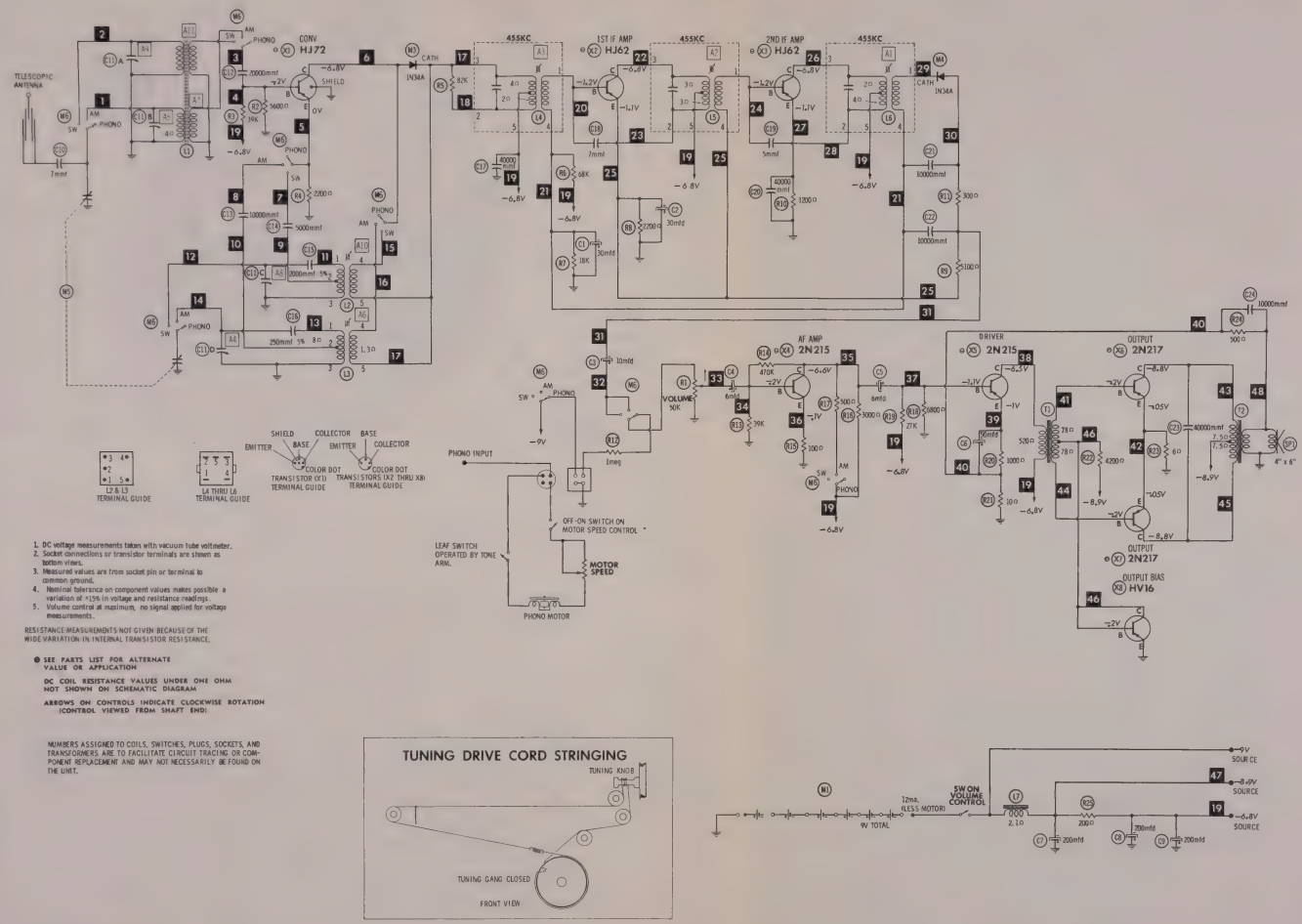

1. DC voltage measurements taken with vacuum tube voltmeter.
2. Socket connections or transistor terminals are shown as bottom views.
3. Measured values are from socket pin or terminal to common ground.
4. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
5. Volume control at maximum, no signal applied for voltage measurements.

RESISTANCE MEASUREMENTS NOT GIVEN BECAUSE OF THE WIDE VARIATION IN INTERNAL TRANSISTOR RESISTANCE.

● SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION (CONTROL VIEWED FROM SHAFT END)

NUMBERS ASSIGNED TO COILS, SWITCHES, PLUGS, SOCKETS, AND TRANSFORMERS ARE TO FACILITATE CIRCUIT TRACING OR COMPONENT REPLACEMENT AND MAY NOT NECESSARILY BE FOUND ON THE UNIT.

TUNING DRIVE CORD STRINGING

A PHOTOFACT STANDARD NOTATION SCHEMATIC with CIRCUITRACT

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CROWN MODEL TRP-20

PARTS LIST AND DESCRIPTIONS

WIRING DATA

General-use Unshielded Hook-up Wire .....Use BELDEN No. 8530 (Solid) Available in Ten Colors
8524 (Stranded) Available in Ten Colors

TRANSISTORS

ITEM No.	ORIG. TYPE	USE	REPLACEMENT DATA			NOTES
			RCA PART No.	RAYTHEON PART No.	SYLVANIA PART No.	
X1	HJ72	Converter				PNP
	2SA82*	Converter				PNP
X2	HJ62	1st IF Amplifier		2N483		PNP
	2SA14*	1st IF Amplifier				PNP
X3	HJ62	2nd IF Amplifier		2N483		PNP
	2SA14*	2nd IF Amplifier				PNP
X4	2N215	AF Amplifier	2N407	2N362	2N104	PNP
	2SB75*	AF Amplifier				PNP
X5	2N215	Driver	2N407	2N362	2N104	PNP
	2SB75*	Driver				PNP
X6	2N217	Output	2N407	2N631	2N217	PNP
	2SB77*	Output				PNP
X7	2N217	Output	2N407	2N631	2N217	PNP
	2SB77*	Output				PNP
X8	HV-16	Output Bias	1N2326			PNP

* Alternate

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						NOTES
	CAP.	VOLT.	CROWN PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	
C1	30	6		BCD6025	ECPB412	TT6X30	ML30-6	VL-1092	
C2	30	6		BCD6025	ECPB412	TT6X30	ML30-6	VL-1092	
C3	10	6		BCD6010	ECPB408	PET1340	ML10-6	VL-1087	
C4	6	6		BCD6006	ECPB406	PET1535	MLV5-12	VL-1085	
C5	6	6		BCD6006	ECPB406	PET1535	MLV5-12	VL-1085	
C6	50	6		BCD6050	ECPB115	PET1575	ML50-6	VL-1094	
C7	200	10		SRE12V200	NLW200-15		MLV200-10	TE-1104	
C8	200	10		SRE12V200	NLW200-15		MLV200-10	TE-1104	
C9	200	10		SRE12V200	NLW200-15		MLV200-10	TE-1104	

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C10	7		NPO-DI 6.8	DTZ-6R8	C10V7C	CCTO-6R8	CNO-568	10TCC-V68

FIXED CAPACITORS (cont)

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C11A								
B								
C								
D								
C12	20000		BPD-02	DD-203	BYB6S2	CCD-203	B-120	5HK-S20
C13	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C14	5000		BPD-05	DD-502	BYA10D5	CCD-502	B-250	5HK-D50
C15	2000 5%		1469-002		5R5D2	CM-19B-202J	MCE457	MS-22
C16	250 5%			TCZ-240	22RST25	CM-19B-251J	MCE240	MS-325
C17	40000			DD-403	DPMS6S4	1DP-1-403	GP140	4PS-S40
C18	7		NPO-DI 6.8	DTZ-6R8	C10V7C	CCTO-6R8	CNO-568	10TCC-V68
C19	5		NPO-DI 5.0	DTZ-4R7	C10V5C	CCTO-050	CNO-547	10TCC-V50
C20	40000			DD-403	DPMS6S4	1DP-1-403	GP140	4PS-S40
C21	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C22	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C23	40000			DD-403	DPMS6S4	1DP-1-403	GP140	4PS-S40
C24	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	CROWN PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	
R1A	50K	1/4						Volume
B	Switch							Power Off-On

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REPLACEMENT DATA		
		IRC PART No.	WORKMAN TV PART No.	REMARKS
R2	5600Ω			
R3	39K			
R4	2200Ω			
R5	82K			
R6	68K			
R7	18K			
R8	2200Ω			
R9	5100Ω			
R10	1200Ω			
R11	300Ω			
R12	1meg			
R13	39K			

ITEM No.	RATING	REPLACEMENT DATA		
		IRC PART No.	WORKMAN TV PART No.	REMARKS
R14	470K			
R15	100Ω			
R16	3000Ω			
R17	500Ω			
R18	6800Ω			
R19	27K			
R20	1000Ω			
R21	10Ω			
R22	4200Ω			
R23	6Ω			
R24	500Ω			
R25	200Ω			

PARTS LIST AND DESCRIPTIONS (Continued)

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA: CROWN PART No.	Merit PART No.	Miller PART No.	Stancor PART No.	Workman TV PART No.	NOTES
L1A	SW Loopstick						
B	BC Loopstick						
L2	SW Osc.						
L3	BC Osc.						
L4	1st IF						
L5	2nd IF						
L6	3rd IF						

FILTER CHOKE

ITEM No.	RATINGS: CURRENT (Measured)	DC RES.	INDUCTANCE (0 CURRENT 1000 ∿)	REPLACEMENT DATA: CROWN PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
L7	.050A	2.1Ω	.043 HY						

TRANSFORMER (DRIVER)

ITEM No.	TURNS RATIO: PRI.	SEC.	REPLACEMENT DATA: CROWN PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
T1	1.4	1	TRT-18					

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE: PRI.	SEC.	REPLACEMENT DATA: CROWN PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
T2	800Ω CT	3-4Ω	TRT-19					

SPEAKER

ITEM No.	TYPE: SIZE	FIELD	V. C. IMP.	REPLACEMENT DATA: CROWN PART No.	QUAM PART No.	NOTES
SP1	4"x 6"	PM	3-4Ω		46A1	

BATTERIES

ITEM No.	VOLTAGE	CROWN PART No.	REPLACEMENT DATA: BURGESS "A"	BURGESS "B"	EVEREADY "A"	EVEREADY "B"	MALLORY "A"	MALLORY "B"	NOTES
M1	1.5V			230 *		A-100 *		M-13R *	* 6 Required

PHONO CARTRIDGE & NEEDLES

*NEEDLE LISTINGS SHOWN ARE FOR RESPECTIVE REPLACEMENT CARTRIDGES ONLY.

ITEM No.	REPLACEMENT DATA: CROWN PART No. CARTRIDGE	CROWN PART No. NEEDLE*	ASTATIC PART No. CARTRIDGE	ASTATIC PART No. NEEDLE*	ELECTRO-VOICE PART No. CARTRIDGE	ELECTRO-VOICE PART No. NEEDLE*	SONOTONE PART No. CARTRIDGE	SONOTONE PART No. NEEDLE*	NOTES
M2			KR314-T†	Not Req.	46T	Not Req.			† Includes Tone Arm.

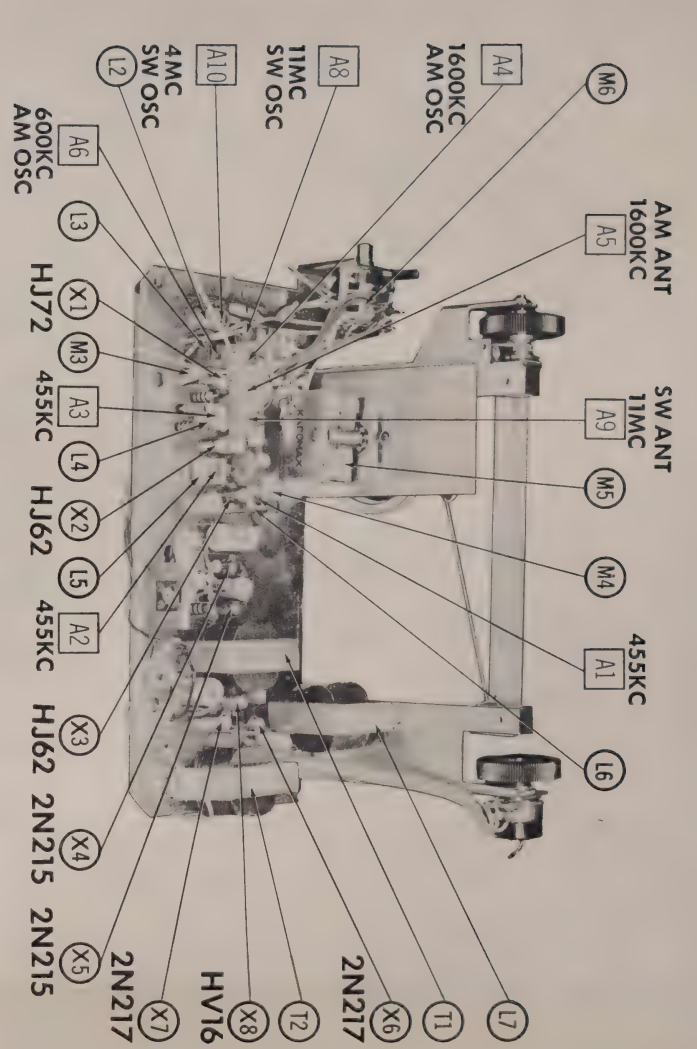
SIGNAL DIODES

ITEM No.	ORIG. TYPE	REPLACEMENT DATA: CROWN PART No.	GENERAL ELECTRIC PART No.	RAYTHEON PART No.	SYLVANIA PART No.	NOTES
M3	1N34A			1N34A	1N34A	Overload (Pigtail)
M4	1N34A			1N34A	1N34A	Detector (Pigtail)

MISCELLANEOUS

ITEM No.	PART NAME	CROWN PART No.	NOTES
M5	Tuning Cap.		2 Gang
M6	Switch		Function Selector (Rotary Type)

CHASSIS—TOP VIEW



PHOTOFACT® Folder

GRANCO MODEL T-300

GRANCO MODEL T-300

GRANCO MODEL T-300

TRADE NAME	Granco Model T-300
MANUFACTURER	Granco Products, Inc., 83-30 Kew Gardens Road, Kew Gardens 15, N. Y.
TYPE SET	AC-DC Operated 3 Tube FM Tuner
POWER SUPPLY	105 — 120 Volts AC-DC RATING 16 Watts, .15 Amp. @117 Volts AC
TUNING RANGE—FREQ. MOD.	88—108MC

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KJ307

SET 531 FOLDER 6

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Use only enough generator output to provide a usable indication.
Suggested Alignment Tools: A1, A6, A7, A8. GENERAL CEMENT #5009, 8195, 8274, 8275, 8728, 8729, 8987, 8988, 8989
WALSCO #2515, 2531, 2532
A2, A3.....GENERAL CEMENT #8282, 8606, 8606-L, 9295, 9440
WALSCO #2526, 2543, 2544, 2545
A4, A5.....GENERAL CEMENT #9440

IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM—SELECTOR IN FM POSITION

Connect two matched 100K (± 1%) resistors across C2. The junction of these two resistors is alignment point Ⓒ as shown on the schematic.

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
1.	High side thru .001mfd to antenna terminal. Low side to chassis.	10.7MC (Unmod.)	Point of non-interference.	DC probe to point Ⓐ. Common to chassis.	A1, A2, A3, A4, A5	Adjust for maximum deflection.
2.	"	"	"	DC probe to point Ⓑ. Common to point Ⓒ.	A6	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

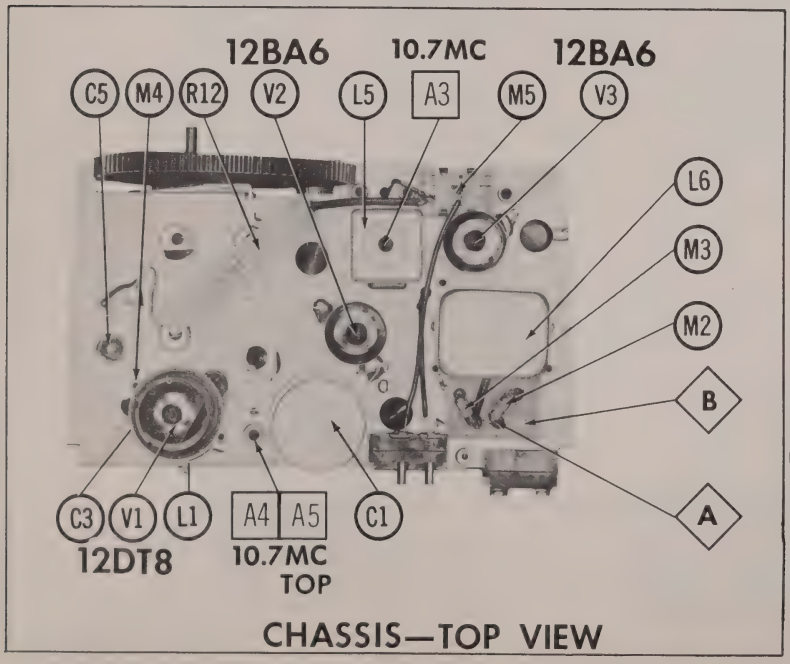
FM IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE—SELECTOR IN FM POSITION

Use frequency modulated signal with 60∿ modulation and 450KC sweep. Use 120∿ sawtooth voltage in scope for horizontal deflection.

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	CONNECT SCOPE	ADJUST	REMARKS
1.	High side thru .001mfd to antenna terminal. Low side to chassis.	10.7MC (450KC Swp)	Point of non-interference.	Vert. amp. to point Ⓐ. Low side to chassis.	A1, A2, A3, A4, A5	Adjust for maximum gain and symmetry of response similar to Fig. 1 with markers as shown.
2.	"	"	"	Vert. amp. to point Ⓑ. Low side to chassis.	A6	Adjust to place marker at the center of crossover lines similar to Fig. 2. SLIGHTLY retouch A1 for maximum amplitude and straightness of cross-over lines.

FM RF ALIGNMENT—SELECTOR IN FM POSITION

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
3.	High side thru 50mmf to antenna terminal. (Remove hank). Low side to chassis.	108MC (Unmod.)	108MC	DC probe to point Ⓐ. Common to chassis.	A7, A8	Adjust for maximum deflection.
4.	"	88MC	88MC	"	A9, A10	"



CHASSIS—TOP VIEW

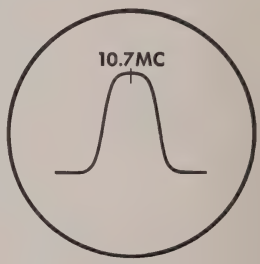


FIG. 1

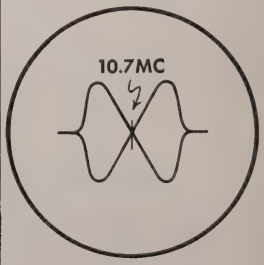


FIG. 2

PARTS LIST AND DESCRIPTIONS

TUBES

• GENERAL ELECTRIC •			• RAYTHEON •		• SYLVANIA •	
ITEM No.	USE	TYPE	ITEM No.	USE	TYPE
V1	RF Amp.-Conv.	12DT8	V3	2nd IF Amplifier	12BA6
V2	1st IF Amplifier	12BA6			

ELECTROLYTIC CAPACITORS

ITEM No.	RATING CAP.	RATING VOLT.	REPLACEMENT DATA GRANCO PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	NOTES
C1A	■80	150	41-5	AFH2-19-25		FP115		TVL-1415	
B	▲50	150				TC492		TVA-1418	
C2	2	50	C502	PRS1300	BBR2-50	TC302	ML2-50	TE-1301	

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	REMARKS	REPLACEMENT DATA AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C3	80 1000V		DI-82	DD-820	L10Q82	CCD-820	GP482	10TS-Q82
C4								
C5	1000		EF-001	MFT-1000		CCF-102	CT280A	
C6	1000		EF-001	MFT-1000		CCF-102	CT280A	
C7	9 N080 5%	#C-669				*		
C8	15 NPO 5%	#C-681		DTZ-15	C10Q15C		CNO-415	10TCC-Q15
C9	8.5 N080 5%	#C-665				*		
C10	68 NPO 10%		NPO-DI 68	DTZ-68	C10Q68C	CCTO-680	CNO-468	10TCC-Q68
C11								
C12	5 N30	#C-682				*		
C13	180	#C-675						
C14	22	#C-676						
C15	1000		EF-001	MFT-1000		CCF-102	CT280A	
C16	4700		DI-4700	DD-472	BYA10D47M	CCD-472	GP247	5HK-D47
C17								
C18	4700		DI-4700	DD-472	BYA10D47M	CCD-472	GP247	5HK-D47
C19								
C20	33		DI-33	DD-330	L10Q33	CCD-330	GP433	10TS-Q33
C21	1500		DI-1500	DD-152	BYA10D15	CCD-152	GP215	5HK-D15
C22	470		DI-470	DD-471	BYA10T47	CCD-471	GP347	10TS-T47
C23	1500		DI-1500	DD-152	BYA10D15	CCD-152	GP215	5HK-D15
C24	20000		BPD-02	DD-203	BYB6S2	CCD-203	GP120	5HK-D20
C25	470		DI-470	DD-471	BYA10T47	CCD-471	GP347	10TS-T47
C26	1000		EF-001	MFT-1000		CCF-102	CT280A	
C27	1000		EF-001	MFT-1000		CCF-102	CT280A	
C28	1500		DI-1500	DD-152	BYA10D15	CCD-152	GP215	5HK-D15

Granco Part Number.
* Not normally in distributor's stock. Available thru distributor on order to manufacturer.

RESISTORS

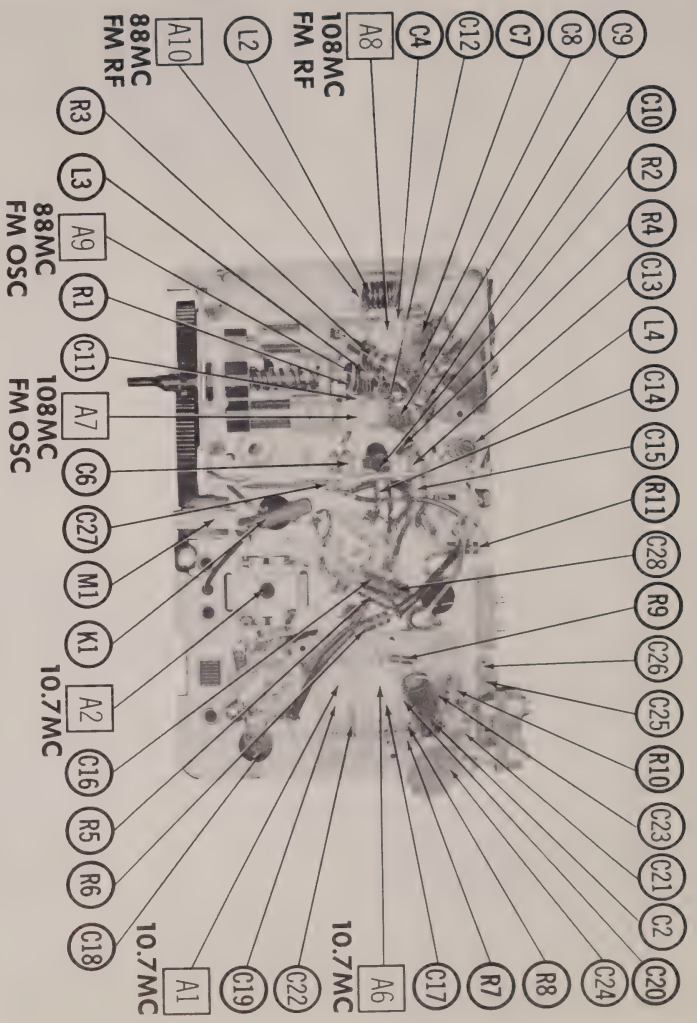
All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REPLACEMENT DATA IRC PART No.	WORKMAN TV PART No.	REMARKS
R1	2200Ω			
R2	22K			
R3	47K			
R4	1meg			
R5	330Ω			
R6	330Ω			

* Alternate Value.

ITEM No.	RATING	REPLACEMENT DATA IRC PART No.	WORKMAN TV PART No.	REMARKS
R7	33K			
R8	1000Ω			(470Ω) *
R9	1000Ω			
R10	33K			
R11	330Ω			
R12	680Ω 12W			#R682

CHASSIS—BOTTOM VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	GRANCO PART No.	REPLACEMENT DATA
K1	IF Amp. Grid Bias	1500mmf, 100K	54-3	

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA				NOTES
		GRANCO PART No.	Merit PART No.	Miller PART No.	Stancor PART No.	
L1	Cathode Choke	18-27A ①				① Includes 10mmf Cap.
L2	RF Coil	18-23A				
L3A	Osc. Coil Prim.	18-21C				
B	Osc. Coil Sec.	18-22A				
L4	1st IF Trans.	28-10A				
L5	2nd IF Trans.	28-2	FM-254	1463	RTC-8599	
L6	Ratio Detector	123-52				

POWER RECTIFIERS

ITEM No.	RATING	REPLACEMENT DATA				NOTES
	CURRENT (Measured)	GRANCO PART No.	RCA PART No.	SARKES TARZIAN PART No.	SYLVANIA PART No.	
M1	.025A	10-8 *	1N1763 ♦	65 *	SR200♦	* Selenium Type ♦ Silicon Type

SIGNAL DIODES

ITEM No.	ORIG. TYPE	REPLACEMENT DATA				NOTES
		GRANCO PART No.	GENERAL ELECTRIC PART No.	RAYTHEON PART No.	SYLVANIA PART No.	
M2	1N63	11-2		1N63	1N63	FM Det. (Pigtail)
M3	1N63	11-2		1N63	1N63	FM Det. (Pigtail)

MISCELLANEOUS

ITEM No.	PART NAME	GRANCO PART No.	NOTES
M4	Tuner	TU-8	Complete
M5	Switch	21-15	Off-On (SPST Slide Type)

CABINETS & CABINET PARTS

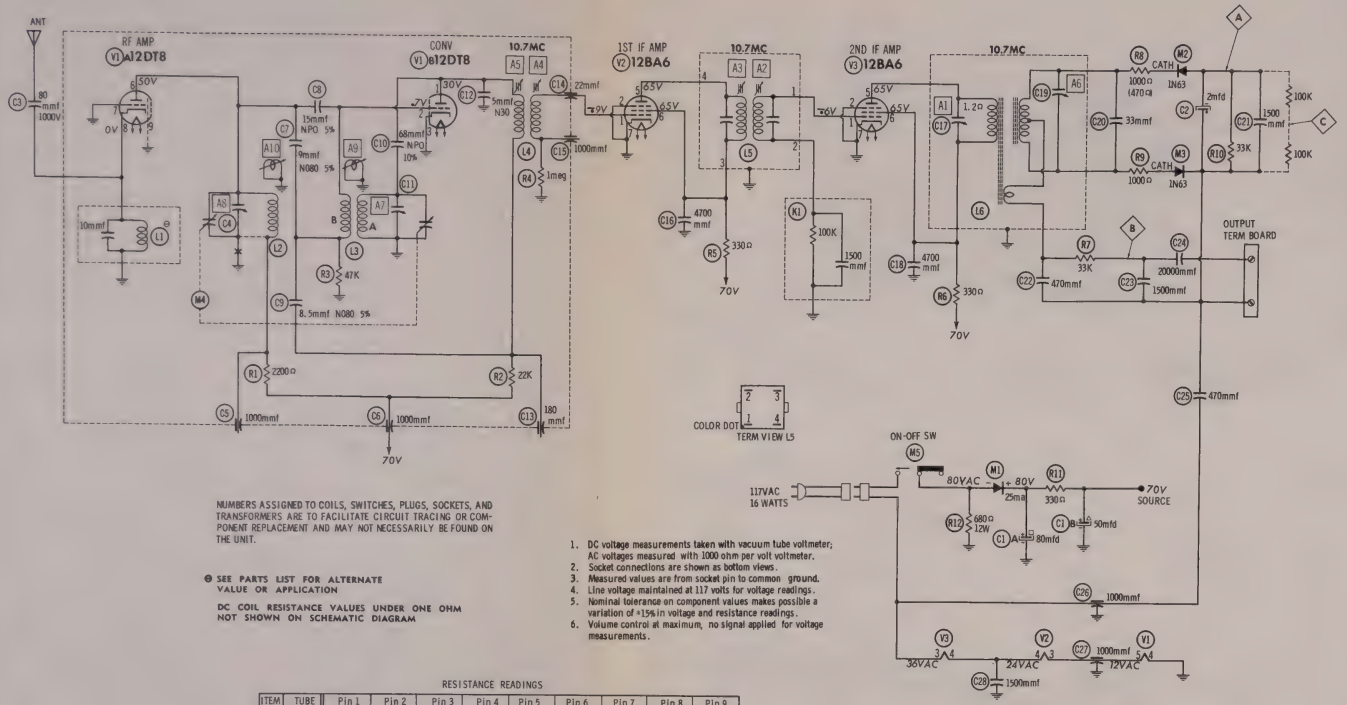
(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

NAME	PART NO.	DESCRIPTION
Knobs	17-22	Tuning, Off-On
Cabinet	13-30	

WIRING DATA

General-use Unshielded Hook-up Wire ..... Use BELDEN No. 8530 (Solid) Available in Ten Colors
8524 (Stranded) Available in Ten Colors

Power Cord (Interlock Type) ..... Use BELDEN No. 8874



NUMBERS ASSIGNED TO COILS, SWITCHES, PLUGS, SOCKETS, AND TRANSFORMERS ARE TO FACILITATE CIRCUIT TRACING OR COMPONENT REPLACEMENT AND MAY NOT NECESSARILY BE FOUND ON THE UNIT.

⊖ SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured with 1000 ohm per volt voltmeter.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common ground.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	12DT8	†22K	47K	0Ω	0Ω	15Ω	†2500Ω	0Ω	0Ω	0Ω
V2	12BA6	1meg	0Ω	15Ω	30Ω	†660Ω	†660Ω	0Ω		
V3	12BA6	100K	0Ω	45Ω	30Ω	†660Ω	†660Ω	0Ω		

† MEASURED FROM OUTPUT OF M1.

A PHOTOFACT STANDARD NOTATION SCHEMATIC
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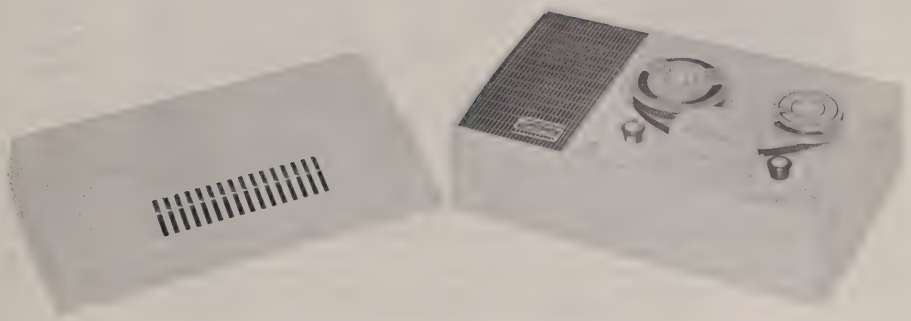
GRANCO MODEL T-300

PHOTOFACT® Folder with CIRCUITRACE®

GRUNDIG MAJESTIC
MODEL Niki SKL/E



GRUNDIG MAJESTIC
MODEL Niki SKL/E

GENERAL INFORMATION

The Grundig Majestic Model Niki SKL/E is a single speed, dual-track tape recorder.

Recordings can be made from a radio or phonograph as well as those made directly from the microphone.

Using both tracks at 3 3/4 ips on a 3-inch reel, the recording and playback time is one-half hour.

The power supply is self-contained, consisting of 4 leak-proof, size "D" 1 1/2-volt batteries and 2 size "AA" 1 1/2-volt batteries. Power may also be obtained from a 6-volt storage battery or from 110/220 volt, 50/60 cycle AC power line, using the power pack.

Supplied By:
Majestic International Sales
743 N. La Salle Street
Chicago 10, Illinois

SET 531 FOLDER 7

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of CQ461

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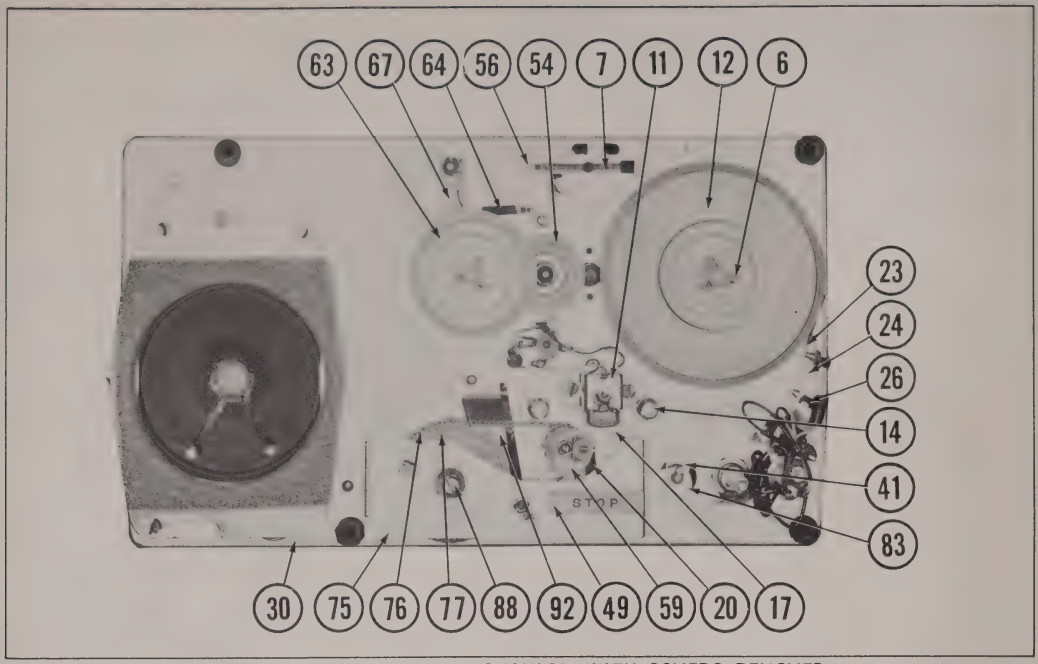


FIG.1 TOP VIEW OF MECHANISM WITH COVERS REMOVED

FUNCTION OF CONTROLS

Selector Switch

The Selector Switch has four functions, They are as follows:

1. The red dot is the "Off" position. When in this position, the power to the recorder is switched off.
2. When turned to the green circle, the recorder is in the playback position.
3. When turned to the blue circle, the recorder is in record position.
4. Turning the Selector Switch completely to the left, places the recorder in the rewind position.

Temporary Stop

The Temporary Stop bar, labeled "Stop" on the recorder, permits the operator to stop the forward motion of the tape temporarily to cut out unwanted portions of material being recorded.

It stops the recorder either in record or playback positions only as long as it is being pressed.

Recording Level/Volume

The knob on the right serves as a sensitivity control while recording, and as a volume control during playback.

OPERATING INSTRUCTIONS

Threading the Tape

1. Place a full reel of tape on the left-hand spindle.
2. Place an empty reel on the right-hand spindle.
3. Unwind about 10" of tape from the reel. Hold a section taut and insert it into the tape slot. Make sure the dull-coated side faces the rear of the recorder.
4. Insert the free end of the tape into one of the radial slots in the hub of the empty reel. Turn the reel several turns counterclockwise to fasten the tape to the reel and also to take up the slack between reels.

NOTE: Be sure the lugs of the reel holders are parallel to the ridges of the spindles before putting the reels on the spindle. After the reels are in place, turn the reel holders 90 degrees clockwise to secure the reel on the spindles.

Recording from Microphone

1. Insert the microphone into the "Input-Output" socket.
2. Depress the Stop button.
3. Turn the Selector switch to "Record" position.

4. Set the Sensitivity control to its center position.

5. Release the Stop button and start recording.

NOTE: To make sure the recording level is correct, a test recording should be made. Hold the microphone 8 to 12 inches from your mouth, speaking in a normal voice.

Recording from a Radio or Television Receiver

Connect the recorder to a radio or television receiver by means of a connecting lead. Tune in the desired station. Volume and Tone level of the radio or television will have little or no effect on the recording.

Follow steps 2 thru 5 in, "Recording from Microphone", to record the program.

Dual Track Recording

This recorder is designed to record and play on one-half the width of the tape at a time; thereby, resulting in two-track recording. After the first recording is completed, remove the full reel from the right-hand spindle; turn the reel over, and place it on the left-hand spindle and proceed with the recording. The tape may be played back in the same manner.

Rewind

To rewind the tape at a rapid speed, turn the Selector Switch to Rewind position.

To Play a Recording

1. Thread the tape as described under "Threading the Tape".

2. Turn the Selector Switch to "Play" position.

3. Adjust the Volume control to the desired listening level.

To Erase a Recording

With the Selector Switch in "Record" position, any recording on the tape is automatically erased before a new recording is made. Should it be desired to erase a recording without recording new material, follow the normal recording procedure, but set the volume control to the full counterclockwise position and leave the microphone disconnected.

6-Volt Car Battery Connection

To operate this recorder from a 6-volt car battery, connect a lead from the 6-volt car battery socket on the recorder to the voltage source.

NOTE: The 4, D-type batteries must be removed before operating on the 6-volt car battery; the 2 small penlite batteries should remain connected.

The 6-volt battery socket is located right above the "Input-Output" socket on the left side of the recorder.

To Edit and Splice Tape

NOTE: It is impossible to edit and splice one track without affecting the other. Recordings to be edited should be limited to one track only.

1. Tape may be edited by cutting out unwanted portions, or by joining selections into another sequence.

   Announcements can be inserted between selections, etc. Unused tape can be spliced for reuse.

2. For best results, cut tape at a slight diagonal, butt ends together and fasten on the glossy side with splicing tape. Trim off any excessive width.

DISASSEMBLY

To Remove from Case

1. Unfasten the large slotted screw on the bottom of the case and remove the bottom cover.

2. Remove all control knobs.

3. Remove the four nuts holding the mechanism to the case and lift the mechanism from the case.

4. Reverse the foregoing procedure to reassemble.

To Remove Amplifier Board from Tape Transport

1. Remove four screws holding the printed circuit board to the tape transport mechanism.

2. Disconnect all interconnecting leads.

3. Unplug the interconnecting plug.

4. Carefully lift the printed circuit board away from the tape transport mechanism.

CLEANING

The surfaces of the drive wheels will become slippery if oil or grease comes in contact with them. Use a soft cloth dipped in alcohol to clean the dirt and grease from these parts.

The play-record head, erase head, and tape guides accumulate tape oxide coating as the tape passes these parts. Clean these parts with a soft, lint-free cloth dipped in alcohol.

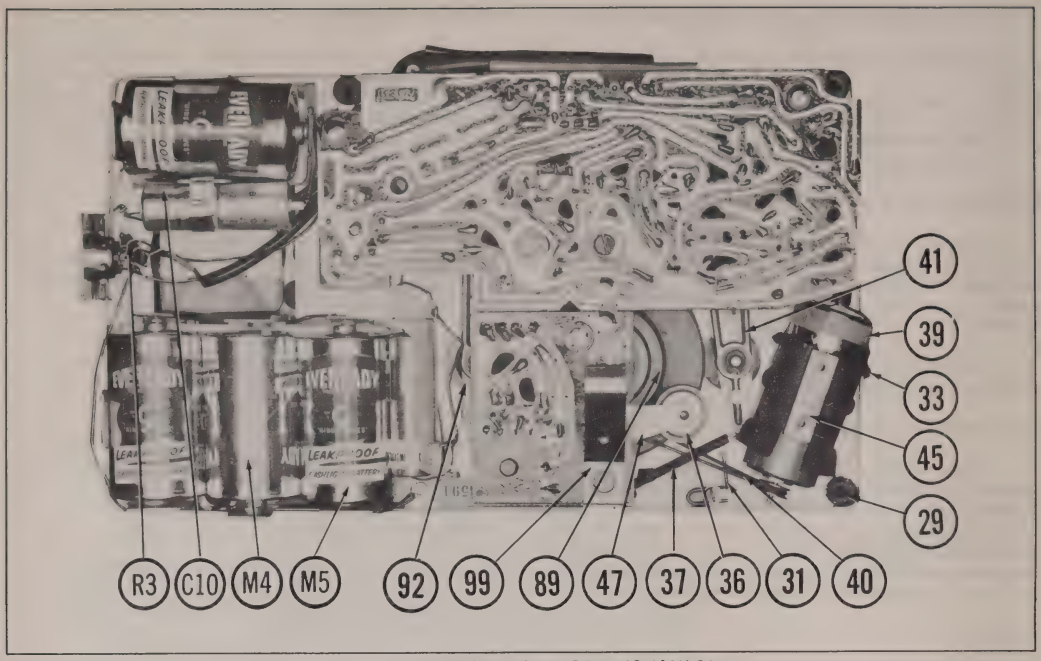


FIG.2 BOTTOM VIEW OF MECHANISM

LUBRICATION

Lubrication should not be required for a long period of time. If the transport is disassembled for repair, apply a thin coat of non-hardening grease on the sliding surfaces and a drop of fine oil on the flywheel bearings. Remove all excess grease and oil.

TROUBLE CHART

Symptom	Cause	Remedy
No Rewind	1. Spring (91) broken or disconnected. 2. Drive belt (40) broken.	1. Replace spring. 2. Replace drive belt.
No Record or Playback	1. Play-Record head (11) defective.	1. Replace Play-Record head.
No Erase	1. Erase head (59) defective. 2. Erase head (59) positioned wrong.	1. Replace erase head. 2. Position erase head so that it faces the glossy side of the tape during "Record".
No Takeup	1. Drive belt (40) broken. 2. Brake release spring (23) misadjusted.	1. Replace drive belt. 2. Adjust brake release spring.
Rewind Reel Brake inoperative	1. Spring (64) broken or disconnected.	1. Replace spring.
Selector Switch operated too freely	1. Chain (76) off or broken.	1. Replace chain.
Motor inoperative	1. Defective motor batteries. 2. Defective motor (39).	1. Replace batteries. 2. Replace motor.

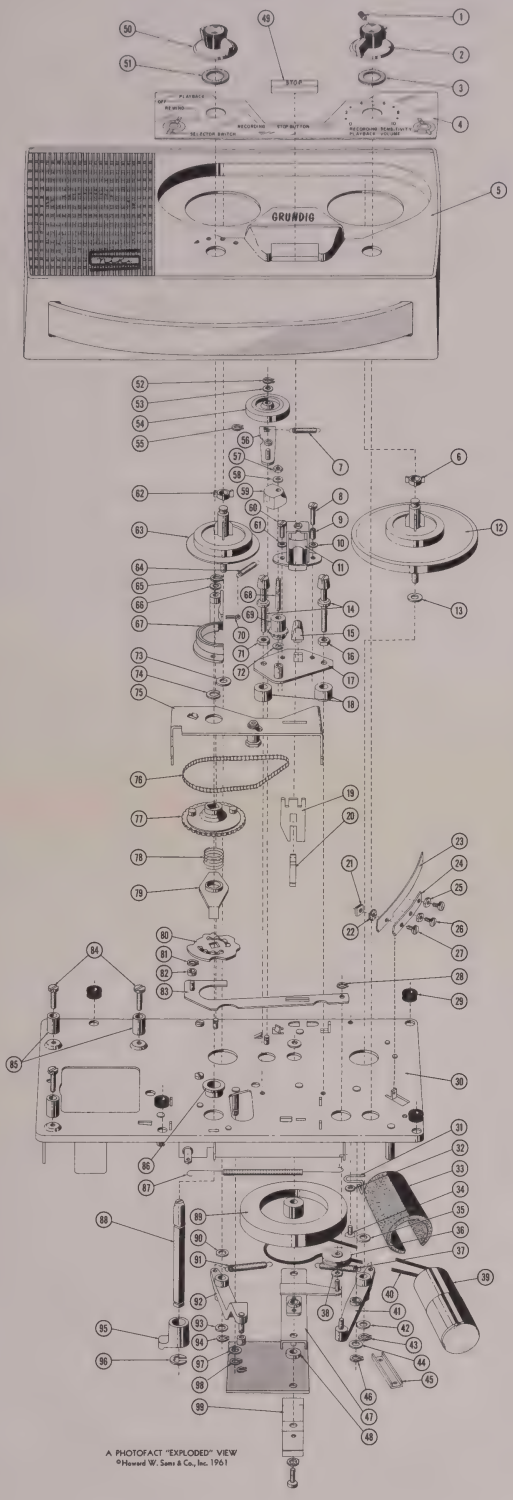


FIG. 3 EXPLODED VIEW OF MECHANISM

ADJUSTMENTS

Tape Guides

The two tape guides should be adjusted so that the lower edge of the tape guide posts are 3/4 inch above the top edge of the base plate.

Take-up Reel Brake

Place the unit in Playback or Record position. Adjust the screw (26) until there is .008 to .024 inch clearance between the right-hand spool disc (12) and the brake release spring (23).

Play-Record Head

Turn screw (8) to adjust the output of the head. Use a good prerecorded tape and adjust head for maximum output.

Erase Head

The erase head should be adjusted so that the bottom of the magnet sets approximately .02 inch above the middle of the tape.

MECHANICAL PARTS LIST

Ref. No.	Description
1	Set Screw
2	Sensitivity Knob (Record) Volume Knob (Playback)
3	Felt Washer
4	Plastic Escutcheon
5	Case
6	Reel Holder
7	Spring
8	Play-Record Head Adjustment Screw
9	Spring
10	Spacer
11	Play-Record Head
12	Takeup Spindle
13	Spacer
14	Tape Guide
15	Head Pivot
16	Lock Nut
17	Head Mounting Plate
18	Spacer
19	Stop Lever
20	Tension Spring
21	Nut
22	Lock Washer
23	Brake Release Spring
24	Mounting Strap
25	Nut
26	Adjustment Screw
27	Mounting Screw
28	Grip Ring
29	Grommet
30	Deck Plate
31	Spring
32	Washer
33	Motor Shock Mount
34	Screw
35	Spacer
36	Motor Idler
37	Spring
38	Washer
39	Motor
40	Drive Belt
41	Takeup Lever
42	Washer
43	Grip Ring
44	Washer
45	Motor Holder Clip
46	Grip Ring
47	Flywheel Support Bracket
48	Mounting Bushing
49	Stop Button

Ref. No.	Description
50	Selector Switch Knob
51	Felt Washer
52	Grip Ring
53	Washer
54	Rewind Idler
55	Grip Ring
56	Rewind Idler Mounting Bracket
57	Nut
58	Washer
59	Erase Head
60	Mounting Screw
61	Washer
62	Reel Holder
63	Rewind Spindle
64	Spring
65	Grip Ring
66	Washer
67	Rewind Brake Lever
68	Erase Head Mounting Stud
69	Erase Head Gear
70	Cotter Key
71	Lock Nut
72	"C" Washer
73	Washer
74	Grip Ring
75	Selector Switch Bracket
76	Chain
77	Function Selector Gear
78	Spring
79	Selector Switch Detent
80	Cam
81	Grip Ring
82	Bushing
83	Drive Actuating Lever
84	Screws
85	Bushings
86	Bushing
87	Spring
88	Selector Switch Shaft
89	Flywheel
90	Washer
91	Spring
92	Rewind Lever
93	Washer
94	Grip Ring
95	Selector Cam
96	"C" Washer
97	Washer
98	Grip Ring
99	Spring Contact

ELECT. PARTS LIST AND DESCRIPTIONS

TRANSISTORS

ITEM No.	ORIG. TYPE	USE	REPLACEMENT DATA			NOTES
			RCA PART No.	RAYTHEON PART No.	SYLVANIA PART No.	
X1	OC-71	Preamplifier	2N406	2N362	2N406	
X2	OC-71	Driver	2N406	2N362	2N406	
X3	OC-72*	Output	2N408	2N632	2N408	
X4	OC-72*	Output	2N408	2N632	2N408	
X5	OC-74	Bias Osc.	2N408			
X6	OC-602	Motor Regulator				

* Some versions may use OC74.

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						NOTES
	CAP.	VOLT.	GRUNDIG PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	
C1	10	12		PTT53	NLW10-15	TT12X10	MLV10-12	TE-1128	
C2	25	12		PTT56	NLW25-15	TT25X25	MLV25-12	TE-1131	
C3	25	6		PTT26	NLW25-10	TT6X25	MLV25-6	TE-1091	
C4	25	6		PTT26	NLW25-10	TT6X25	MLV25-6	TE-1091	
C5	10	12		PTT53	NLW10-15	TT12X10	MLV10-12	TE-1128	
C6	10	12		PTT53	NLW10-15	TT12X10	MLV10-12	TE-1128	
C7	25	6		PTT26	NLW25-10	TT6X25	MLV25-6	TE-1091	
C8	25	6		PTT26	NLW25-10	TT6X25	MLV25-6	TE-1091	
C9	5	12		PTT51	NLW5-15	TT12X5	MLV5-12	TE-1127	
C10	1000	10	BVK041839	PRS1180	BR10001	TC1501	TD-1000-15	TVA-1133	
C11	1	35		PTT87	NLW1-50	TC31	MLV1-150	TE-1300	
C12	1000	12	B4101	PRS1180	BR10001	TC1501	TD-1000-15	TVA-1133	
C13	1000	12	B4101	PRS1180	BR10001	TC1501	TD-1000-15	TVA-1133	
C14	1000	10	BVK041839	PRS1180	BR10001	TC1501	TD-1000-15	TVA-1133	

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C15	10000		SI 10000	D6-103	BYA10S1	CCD-103	B-110	5HK-S10
C16	4000		SI 4000	D6-402	BYA10D4	CCD-392	B-240	5HK-D40
C17	20000		SI 20000	DD-203	BYB6S2	CCD-203	B-120	5HK-S20
C18	2000		SI 2000	D6-202	BYA10D2	CCD-202	B-220	5HK-D20
C19	30000		SI 30000	DD-303	BYB6S3	CCD-303	GP130	5HK-S30
C20	10000		SI 10000	D6-103	BYA10S1	CCD-103	B-110	5HK-S10
C21	5000		SI 5000	D6-502	BYA10D5	CCD-502	B-250	5HK-D50
C22	5000		SI 5000	D6-502	BYA10D5	CCD-502	B-250	5HK-D50

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	GRUNDIG PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	
R1	10K	1/4						Volume
R2	5000Ω	1/4						Bias

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REPLACEMENT DATA			ITEM No.	RATING	REPLACEMENT DATA		
		IRC PART No.	WORKMAN TV PART No.	REMARKS			IRC PART No.	WORKMAN TV PART No.	REMARKS
R3	2700Ω				R13	820Ω			
R4	10K				R14	100Ω			
R5	47K				R15	Temp. Comp.			
R6	10K				R16	5Ω			
R7	5600Ω				R17	5000Ω			
R8	1800Ω				R18	22K			
R9	82K				R19	22Ω			
R10	33K				R20	1000Ω			
R11	56K				R21	22Ω			
R12	22K				R22	10Ω			

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA					NOTES
		GRUNDIG PART No.	Merit PART No.	Miller PART No.	Stancor PART No.	Workman TV PART No	
L1	Bias Osc.	BV9281-060					
L2	RF Choke	BV9281-053					

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA					NOTES
	CURRENT (Measured)	DC RES.	INDUCTANCE (0 CURRENT 1000 ∿)	GRUNDIG PART No	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
L3	.030A DC	20Ω	270 MH	BV9030-513					

TRANSFORMER (POWER)

ITEM No.	RATING			REPLACEMENT DATA					NOTES
	PRI.	SEC. 1	SEC. 2	GRUNDIG PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T1	220V Tap ⓐ 117V ⓐ .050A	7V ⓐ .050A AC	5V ⓐ .4A AC	BV9003-501					

TRANSFORMER (DRIVER)

ITEM No.	TURNS RATIO		REPLACEMENT DATA					NOTES
	PRI.	SEC.	GRUNDIG PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T2	2.4	1	BV9020-006					

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
	PRI.	SEC.	GRUNDIG PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T3	120Ω CT	3-4Ω	BV9030-512					

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP.	GRUNDIG PART No.	QUAM PART No.	
SP1	3"	PM	3-4Ω			

POWER RECTIFIERS

ITEM No.	RATING	REPLACEMENT DATA				NOTES
	CURRENT (Measured)	GRUNDIG PART No.	RCA PART No.	SARKES TARZIAN PART No.	SYLVANIA PART No.	
M1	.030A	B30C500AEG *				* Bridge Type Selenium
M2	.250A	B30C500AEG *				

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			GRUNDIG PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M3		.035A 250V	35MA250V	7691-002 ① 7691-004 ②				

① Includes tapping panel.
② Fuse Cap.

BATTERIES

ITEM No.	VOLTAGE	GRUNDIG PART No.	REPLACEMENT DATA						NOTES
			BURGESS		EVEREADY		MALLORY		
			"A"	"B"	"A"	"B"	"A"	"B"	
M4	1.5V	*		230 *		A100 *		M-13 *	* 4 Required
M5	1.5V	♦		930 ♦		1015 ♦		M-15 ♦	♦ 2 Required

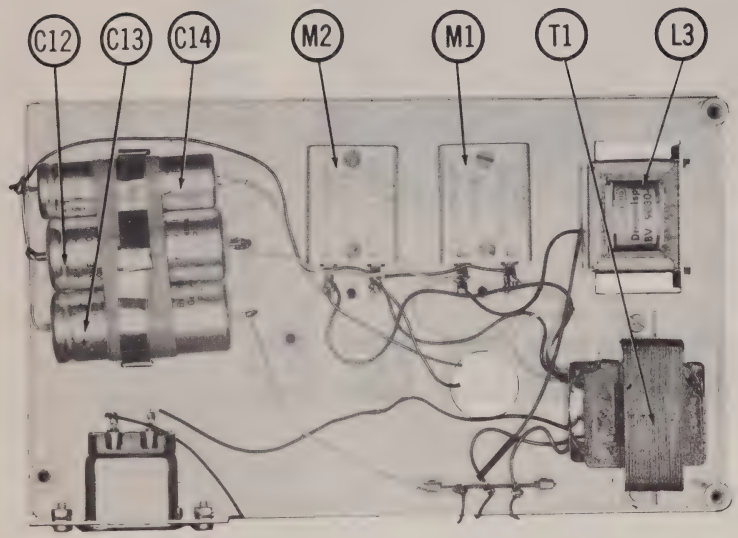
ELECT. PARTS LIST AND DESCRIPTIONS (Continued)

MISCELLANEOUS

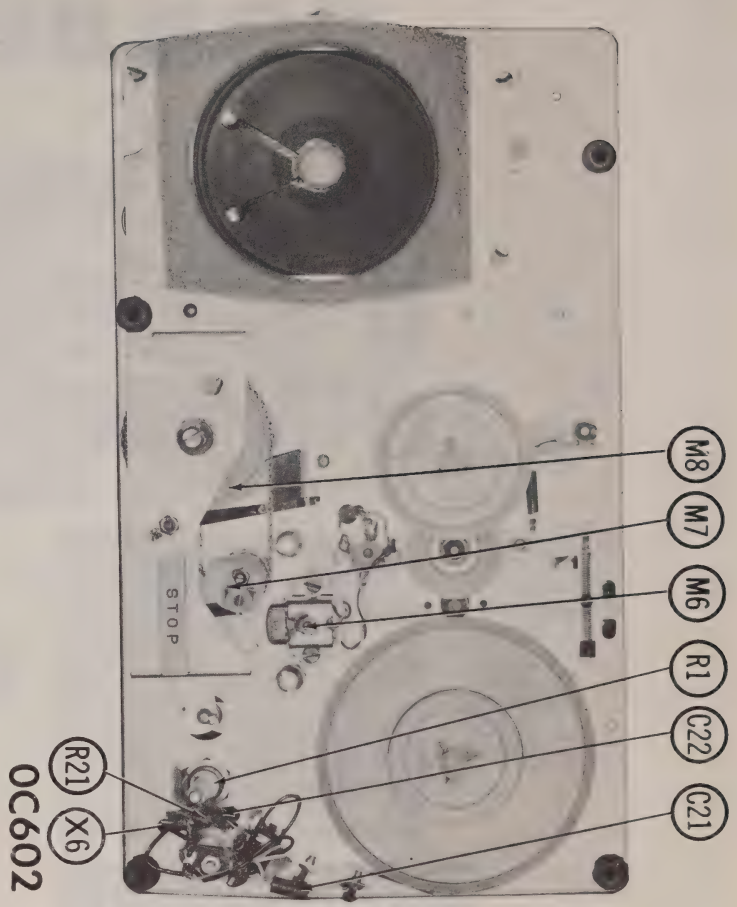
ITEM No.	PART NAME	GRUNDIG PART No.	NOTES
M6	Head	BV9281-055	Record-Playback
M7	Head		Erase
M8	Switch		Selector (Rotary Wafer Type)
M9	Switch		Recording-Playback (Selector Type)
M10	Motor	7882-065	Includes Centrifugal Switch

WIRING DATA

General-use Unshielded Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in Ten Colors 8524 (Stranded) Available in Ten Colors
Power Cord	Use BELDEN No. 1765-B (6 Ft. Length) 1725-K (7½ Ft. Length)
Low-Loss Shielded Lead (Interconnecting)	Use BELDEN No. 8401
Phono Pick-up Arm Cable	Use BELDEN No. 8430 (Two Conductor - Twisted)



MECHANISM—TOP VIEW



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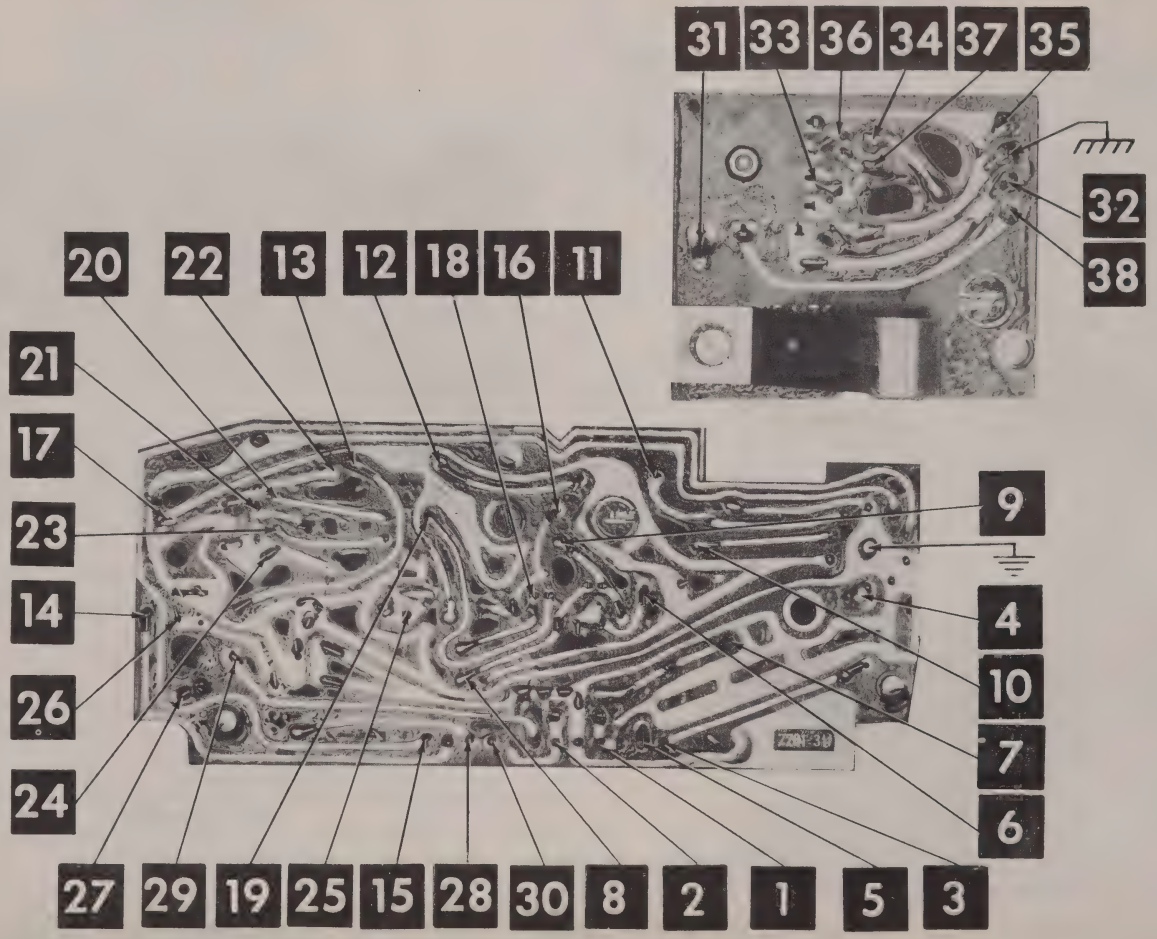
POWER CHASSIS



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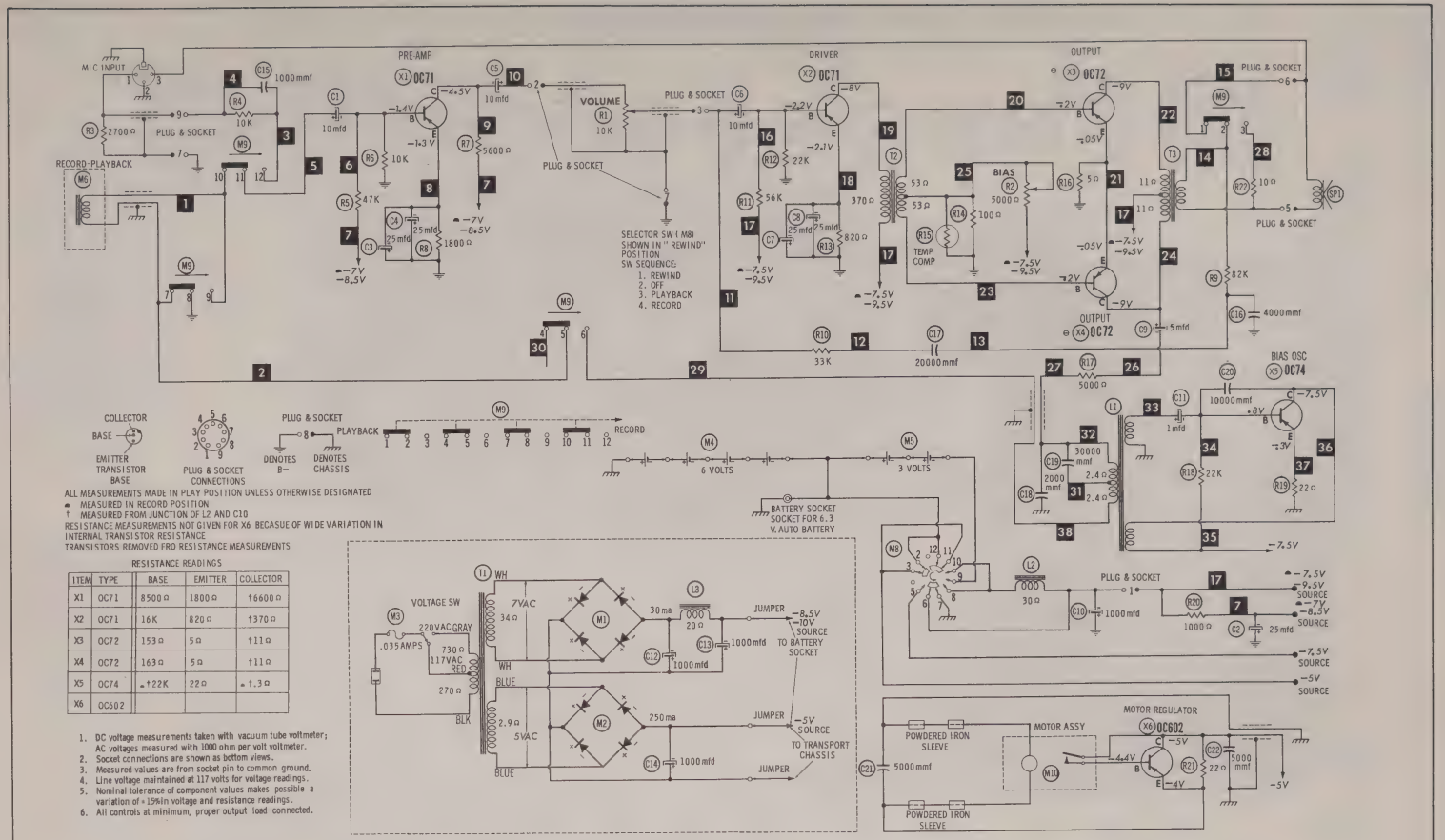
PRINTED BOARDS



ALL MEASUREMENTS MADE IN PLAY POSITION UNLESS OTHERWISE DESIGNATED
- MEASURED IN RECORD POSITION
† MEASURED FROM JUNCTION OF L2 AND C10
RESISTANCE MEASUREMENTS NOT GIVEN FOR X6 BECASUE OF WIDE VARIATION IN INTERNAL TRANSISTOR RESISTANCE
TRANSISTORS REMOVED FRO RESISTANCE MEASUREMENTS

RESISTANCE READINGS

ITEM	TYPE	BASE	EMITTER	COLLECTOR
X1	OC71	8500 Ω	1800 Ω	†6600 Ω
X2	OC71	16K	820 Ω	†370 Ω
X3	OC72	153 Ω	5 Ω	†11 Ω
X4	OC72	163 Ω	5 Ω	†11 Ω
X5	OC74	-†22K	22 Ω	-†1.3 Ω
X6	OC602			

1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured with 1000 ohm per volt voltmeter.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common ground.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance of component values makes possible a variation of ±15% in voltage and resistance readings.
6. All controls at minimum, proper output load connected.

NUMBERS ASSIGNED TO COILS, SWITCHES, PLUGS, SOCKETS, AND TRANSFORMERS ARE TO FACILITATE CIRCUIT TRACING OR COMPONENT REPLACEMENT AND MAY NOT NECESSARILY BE FOUND ON THE UNIT.

Θ SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

A PHOTOFACT STANDARD NOTATION SCHEMATIC with CIRCUITRACE

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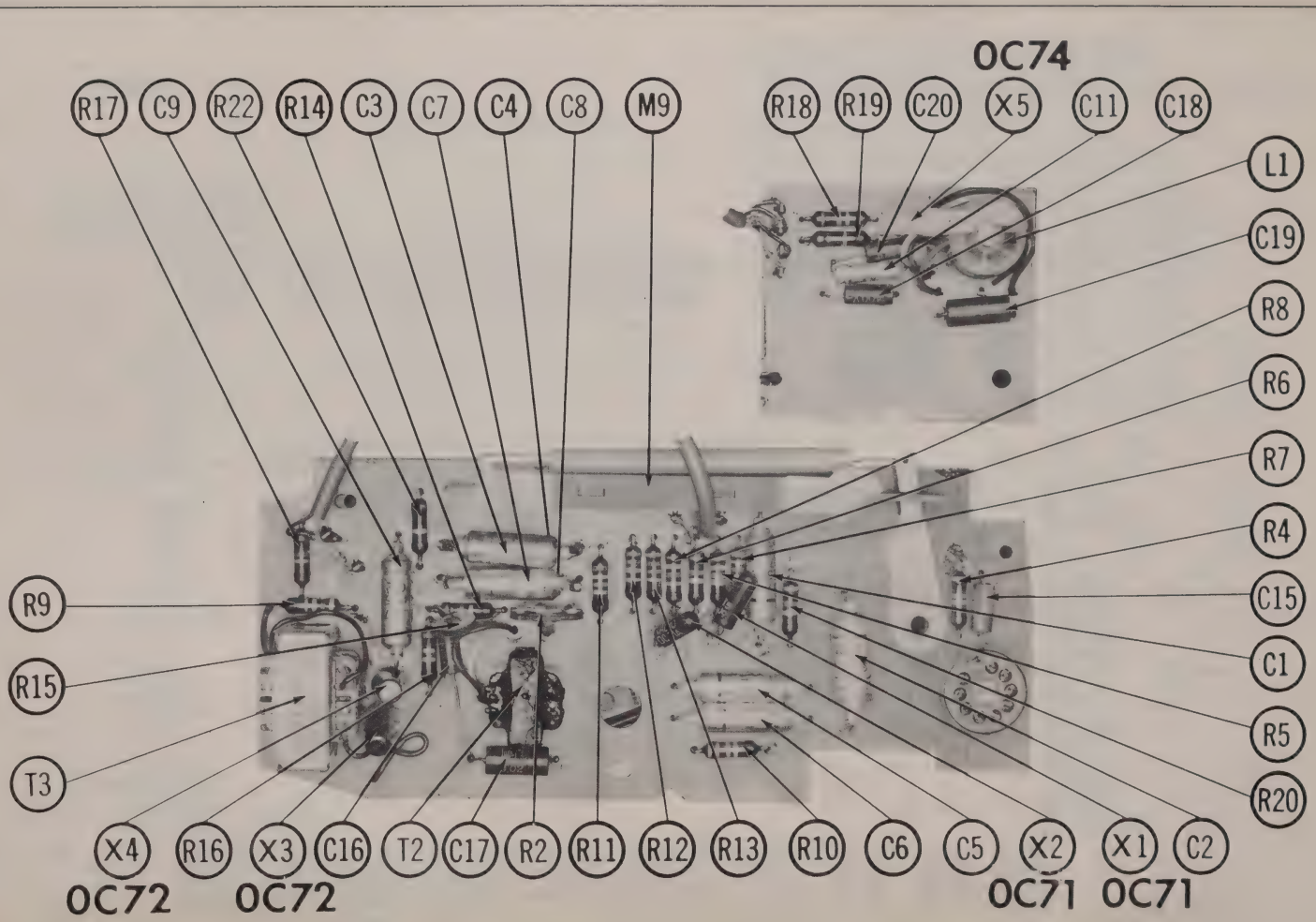
GRUNDIG MAJESTIC MODEL Niki SKL/E

GRUNDIG MAJESTIC
MODEL Niki SKL/E



PRINTED BOARD-TOP VIEW

PHOTOFACT® Folder with CIRCUITRACE®

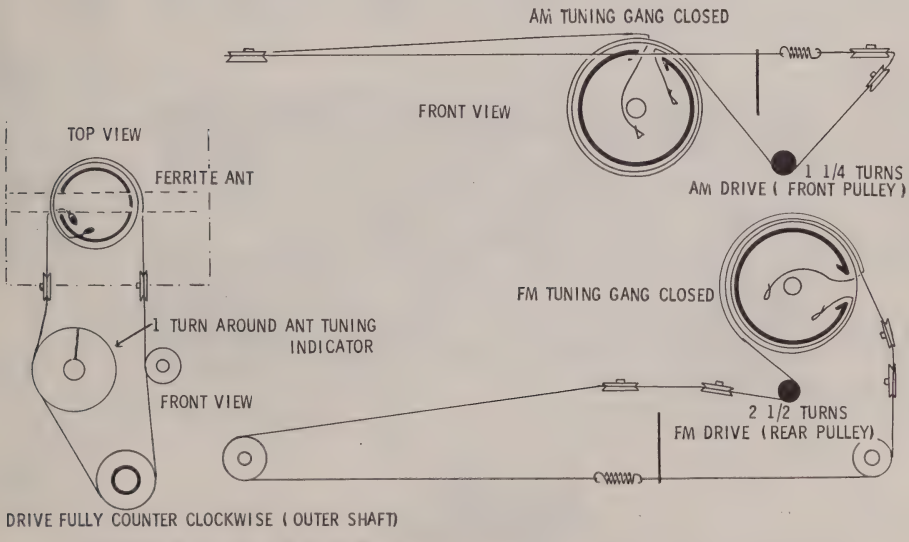
NORDMENDE
MODEL Tannhauser

NORDMENDE
MODEL Tannhauser

NORDMENDE
MODEL Tannhauser

TRADE NAME	Nordmende Model Tannhauser				
IMPORTER	Sterling Hi-Fidelity, Inc., 22-14 40th Ave., Long Island City 1, N. Y.				
TYPE SET	AC Operated 10 Tube FM-BC-SW-LW Receiver with Stereo Amplifier				
POWER SUPPLY	110/130/150/220/240 Volts AC, 50-60 Cycles	RATING	80 Watts, .77 Amp.@117 Volts AC (on 110V Tap)		
TUNING RANGE—BROADCAST	515 — 1650KC	SHORT WAVE	6-18MC		
FREQ. MOD.	88 — 108MC	LONG WAVE	150-350KC		

DIAL CORD STRINGING



HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

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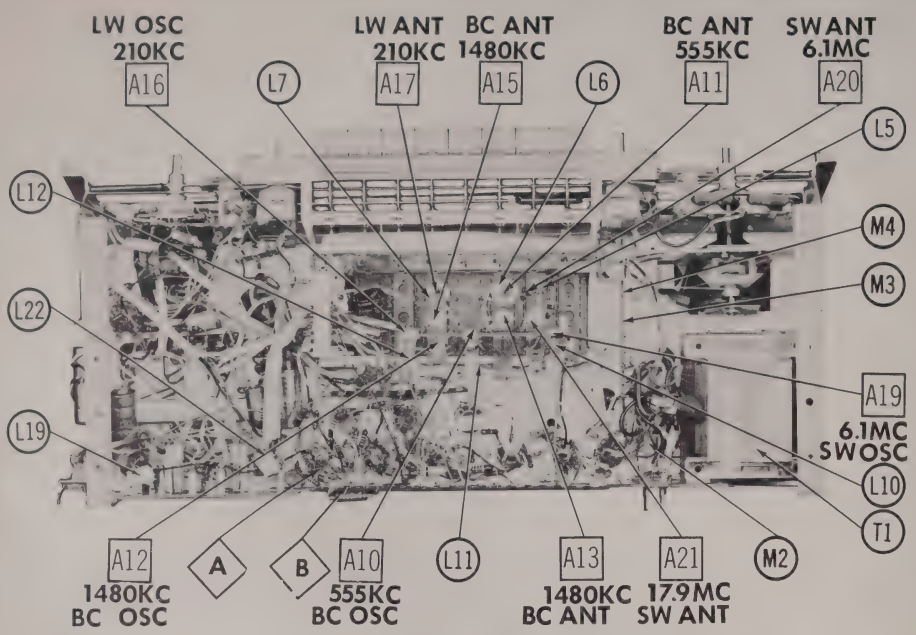
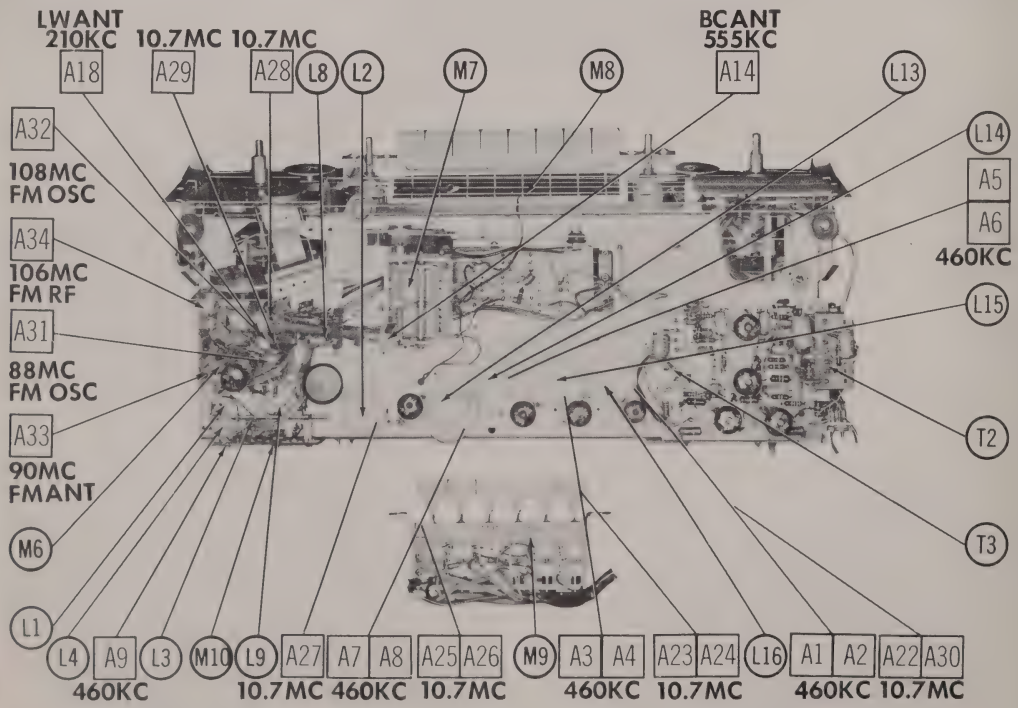
KK381

SET 531 FOLDER 8



CHASSIS BOTTOM VIEW-ALIGNMENT, INDUCTOR & MISC. IDENT.



CHASSIS TOP VIEW-ALIGNMENT, INDUCTOR & MISC. IDENT.

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading.
To set pointer, turn tuning capacitor fully closed and set pointer to last reference mark at low frequency end of dial.
Suggested Alignment Tools: A1 thru A8..... GENERAL CEMENT #5097, 8727
WALSCO #2515
A9, A10, A11, A16, A17, A19, A20, A22 thru A31, .A33.... GENERAL CEMENT #8282, 8606, 8606-L, 9091
WALSCO #2526, 2541, 2542, 2543, 2544
A12, A13, A15, A21, A32, A34..... GENERAL CEMENT #5000, 5003, 5066, 8276, 8290, 9087, 9089
WALSCO #2512, 2525, 2528

AM ALIGNMENT – SELECTOR IN AM POSITION

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	High side thru .1mfd to pin 2 (grid) of AM Mixer. Low side to chassis.	460KC (400∿ Mod.)	(BC) Tuning gang fully open.	Across voice coil.	A1, A2, A3, A4, A5, A6, A7, A8	Adjust for maximum output.
2.	High side to AM antenna jack. Low side to chassis.	"	"	"	A9	Adjust for MINIMUM output.
3.	"	555KC	555KC	"	A10, A11	Adjust for maximum output.
4.	"	1480KC	1480KC	"	A12, A13	Adjust for maximum output. Repeat Steps 3 and 4.
5.	Loop	555KC	555KC	"	A14	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
6.	"	1480KC	1480KC	"	A15	"
7.	"	210KC	(LW) 210KC	"	A16, A17, A18	"
8.	"	6.1MC	(SW) 6.1MC	"	A19, A20	"
9.	"	17.9MC	17.9MC	"	A21	"

FM IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM—SELECTOR IN FM POSITION

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
10.	High side to ungrounded tube shield floating over FM Conv. Low side to chassis.	10.7MC (Unmod.)	(FM) Point of non-interference.	DC probe to point (A). Common to chassis.	A22, A23, A24, A25, A26, A27, A28, A29	Adjust for maximum deflection.
11.	"	"	"	DC probe to point (B). Common to chassis.	A30	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

FM IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE—SELECTOR IN FM POSITION

Use frequency modulated signal with 60∿ modulation and 450KC sweep. Use 120∿ sawtooth voltage in scope for horizontal deflection.

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	CONNECT SCOPE	ADJUST	REMARKS
10.	High side to ungrounded tube shield floating over FM Mixer. Low side to chassis.	10.7MC (450KC Swp)	(FM) Point of non-interference.	Vert. amp to point (A). Low side to chassis.	A22, A23, A24, A25, A26, A27, A28, A29	Disconnect stabilizing capacitor C4. Adjust for maximum gain and symmetry of response similar to Fig. 1 with markers as shown. Reconnect C4.
11.	"	"	"	Vert. amp to point (B). Low side to chassis.	A30	Adjust to place marker at the center of crossover lines similar to Fig. 2. SLIGHTLY retouch A22 for maximum amplitude and straightness of cross-over lines.

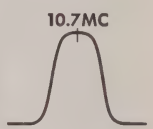
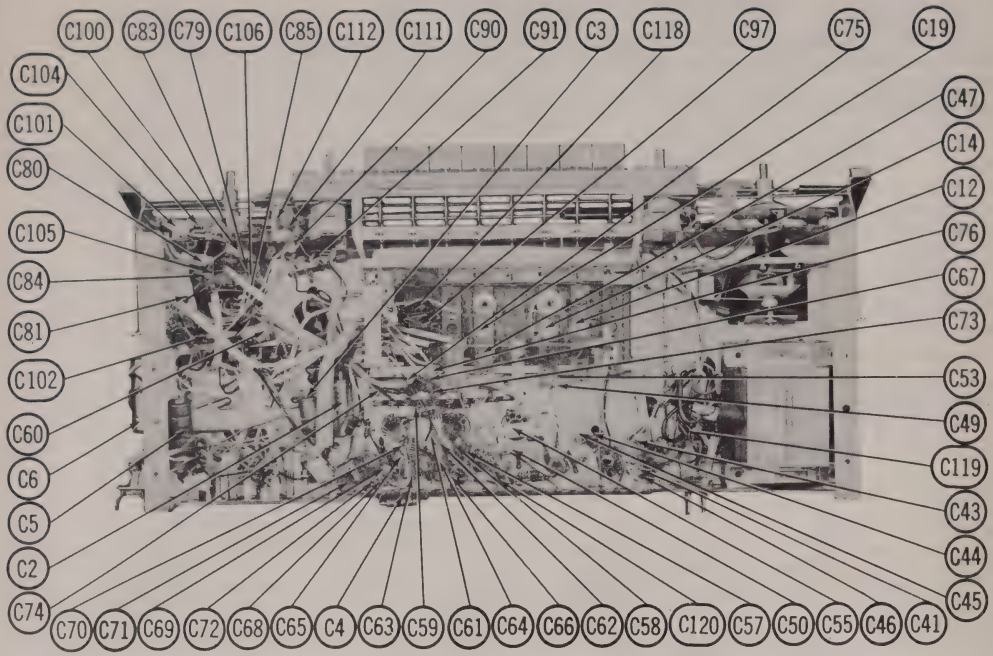


FIG. 1

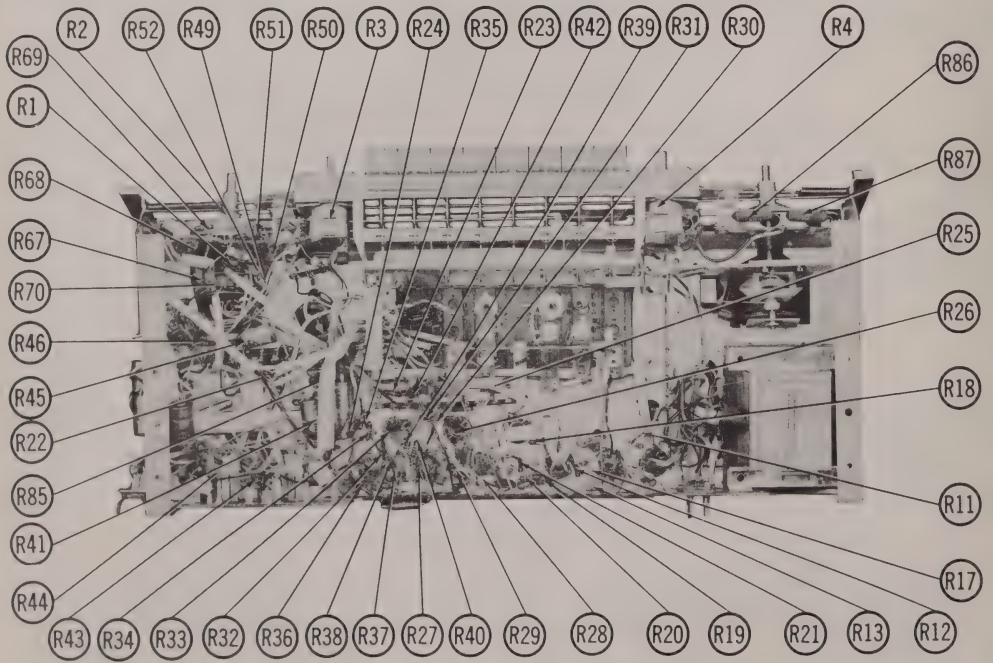
FIG. 2

FM RF ALIGNMENT – SELECTOR IN FM POSITION

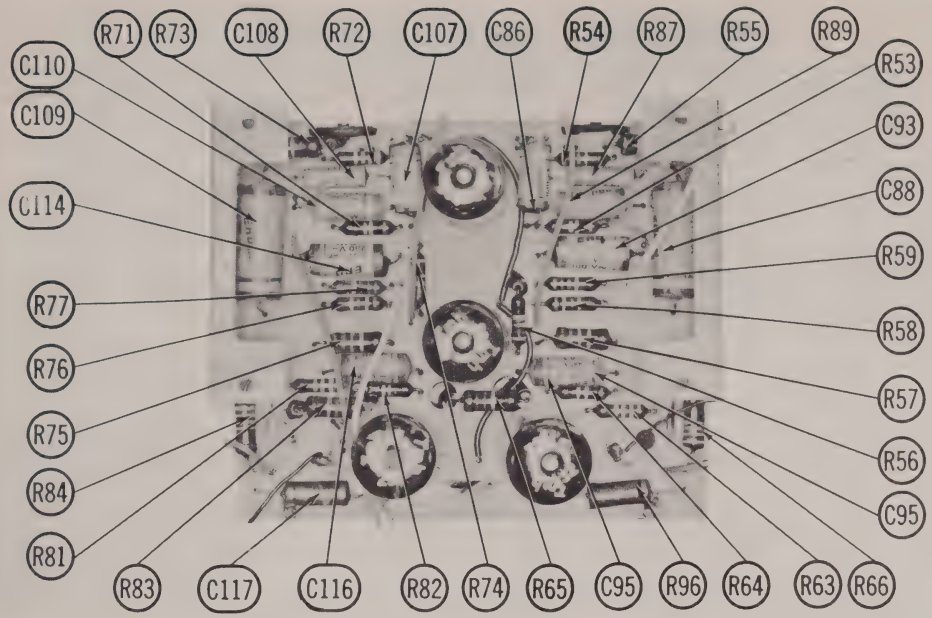
	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
12.	Across FM antenna terminals.	88MC (Unmod.)	(FM) 88MC	DC probe to point (A). Common to chassis.	A31	Adjust for maximum deflection.
13.	"	108MC	108MC	"	A32	"
14.	"	90MC	90MC	"	A33	"
15.	"	106MC	106MC	"	A34	"



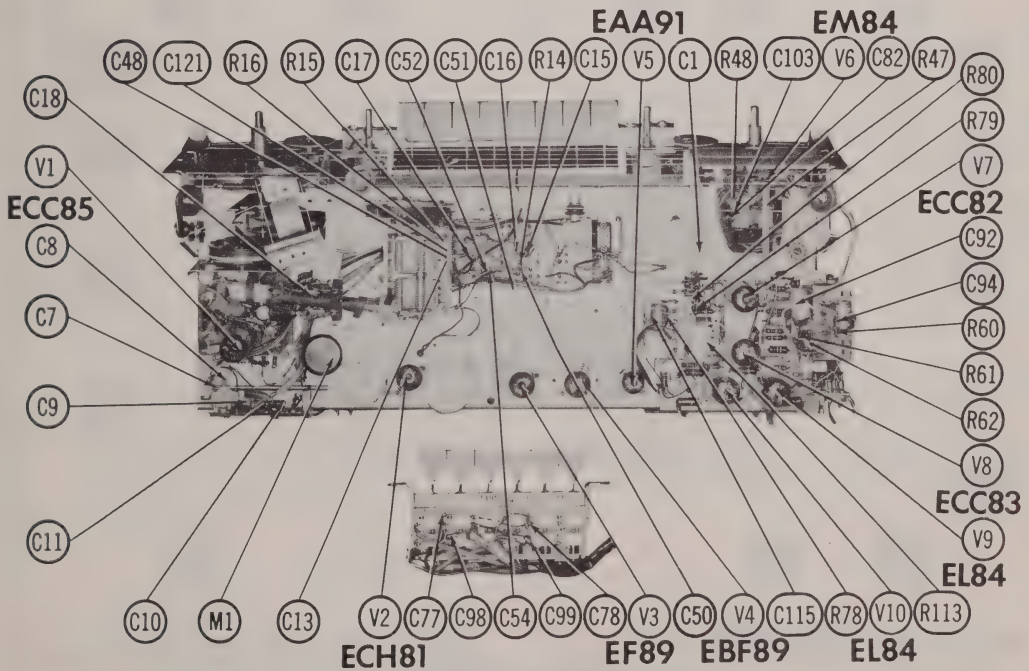
CHASSIS BOTTOM VIEW-CAPACITOR IDENT.



CHASSIS BOTTOM VIEW-RESISTOR IDENT.



PRINTED BOARD-AUDIO SECTION

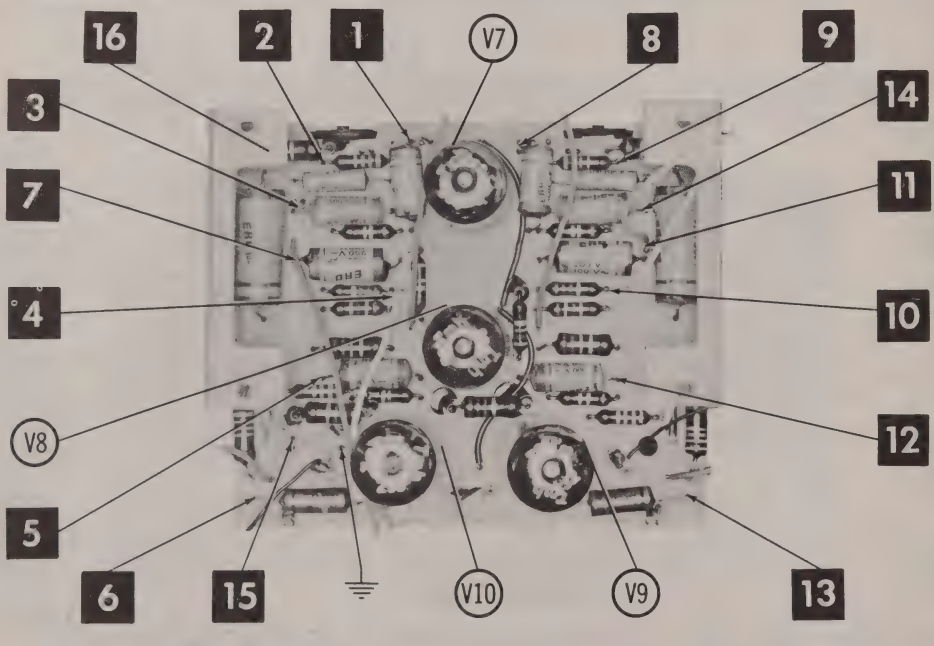


CHASSIS-TOP VIEW

RESISTANCE MEASUREMENTS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	ECC85	†3600Ω	1meg	200Ω	0Ω	.1Ω	†21K	1meg	0Ω	0Ω
V2	ECH81	†48K	1.3meg ◓2.3meg	0Ω	0Ω	.1Ω	†2300Ω	0Ω ◓47K	◓†34K	0Ω ◓47K
V3	EF89	0Ω	1meg ◓2meg	100Ω	0Ω	.1Ω	0Ω	†2300Ω	†50K	0Ω
V4	EBF89	†110K	100K ◓800K	0Ω	0Ω	.1Ω	†11K	220K	345K	15K
V5	EAA91	15K	15K	.1Ω	0Ω	1meg	0Ω	1meg		
V6	EM84	15K ◓700K	NC	0Ω	0Ω	.1Ω	†1300Ω	†470K	NC	†470K
V7	ECC82	†140K	10meg	0Ω	.1Ω	.1Ω	†140K	10meg	0Ω	.1Ω
V8	ECC83	†230K	820K	2700Ω	.1Ω	.1Ω	†230K	820K	2700Ω	.1Ω
V9	EL84	NC	780K	220Ω	.1Ω	.1Ω	NC	†700Ω	NC	†300Ω
V10	EL84	NC	780K	220Ω	.1Ω	.1Ω	NC	†700Ω	NC	†300Ω

ALL MEASUREMENTS TAKEN IN "FM" POSITION UNLESS OTHERWISE DESIGNATED.
◓ MEASURED IN "AM" POSITION.
† MEASURED FROM OUTPUT OF M1.
NC NO CONNECTION



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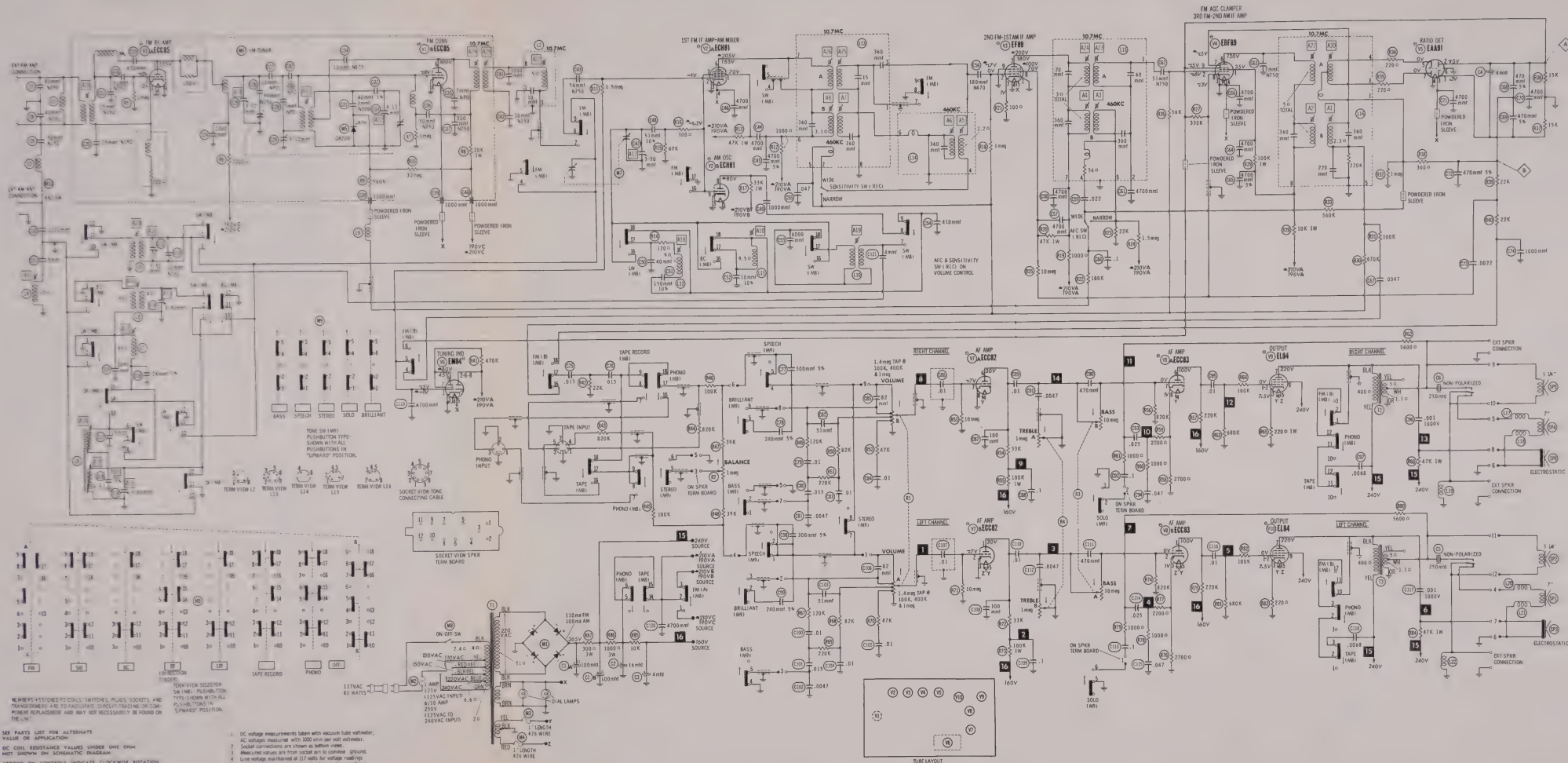
ARROWS INDICATING TUBE LOCATIONS ARE POINTING TO PIN 1 UNLESS OTHERWISE INDICATED

PRINTED BOARD


FM AGC CLAMPER
3RD FM-2ND AM IF AMP
1ST FM IF AMP-AM MIXER
2ND FM-1ST AM IF AMP
FM CONV
FM RF AMP
RATIO DET
AF AMP
OUTPUT
RIGHT CHANNEL
LEFT CHANNEL
TUNING IND
PHONO INPUT
TAPE RECORD
TAPE INPUT
VOLUME
BALANCE
BASS
TREBLE
BRILLIANT
SPEECH
STEREO
SOLO
ON SPKR TERM BOARD
SOCKET VIEW SPKR TERM BOARD
SOCKET VIEW TONE CONNECTING CABLE
TERM VIEW SELECTOR SW (MB) - PUSHBUTTON TYPE-SHOWN WITH ALL PUSHBUTTONS IN "UPWARD" POSITION.
TONE SW (MB) PUSHBUTTON TYPE-SHOWN WITH ALL PUSHBUTTONS IN "UPWARD" POSITION.
AFC & SENSITIVITY SW (RIC) ON VOLUME CONTROL
WIDE
NARROW
SENSITIVITY SW (RIC)
AFC SW (RIC)
ON-OFF SW
DIAL LAMPS
TUBE LAYOUT BOTTOM VIEW
ELECTROSTATIC
NON-POLARIZED
EXT SPKR CONNECTION
POWDERED IRON SLEEVE
NUMBERS ASSIGNED TO COILS, SWITCHES, PLUGS, SOCKETS, AND TRANSFORMERS ARE TO FACILITATE CIRCUIT TRACING OR COMPONENT REPLACEMENT AND MAY NOT NECESSARILY BE FOUND ON THE CHASSIS.
SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION
DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM
ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION CONTROL VIEWED FROM SHAFT END
DC voltage measurements taken with vacuum tube voltmeter, AC voltages measured with 1000 ohm per volt voltmeter.
Socket connections are shown as bottom views.
Measured values are from socket pin to common ground.
Line voltage maintained at 117 volts for voltage readings
Nominal tolerance on component values makes possible a variation of +15% in voltage and resistance readings.
Volume control at maximum, no signal applied for voltage measurements.
A PHOTOFACT STANDARD NOTATION SCHEMATIC
CircuiTrace
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NORDMENDE
MODEL Tannhauser

PARTS LIST AND DESCRIPTIONS

TUBES

• GENERAL ELECTRIC • RAYTHEON • SYLVANIA •

ITEM No.	USE	TYPE
V1	FM RF Amp.-FM Conv.	ECC85 (6AQ8) *
V2	1st FM IF Amp.-AM Mixer-AM Osc.	ECH81 (6AJ8) *
V3	2nd FM-1st AM IF Amp.	EF89 (6DA6) *
V4	3rd FM-2nd AM IF Amp.-FM AGC Clamper	EBF89
V5	Ratio Detector	EAA91 (6AL5) *
V6	Tuning Indicator	EM84
V7	Left Channel AF Amp.-Right Channel AF Amp.	ECC82 (12AU7)
V8	Left Channel AF Amp.-Right Channel AF Amp.	ECC83 (12AX7) *
V9	Left Channel Output	EL84 (6BQ5) *
V10	Right Channel Output	EL84 (6BQ5) *

* Alternate

ELECTROLYTIC CAPACITORS

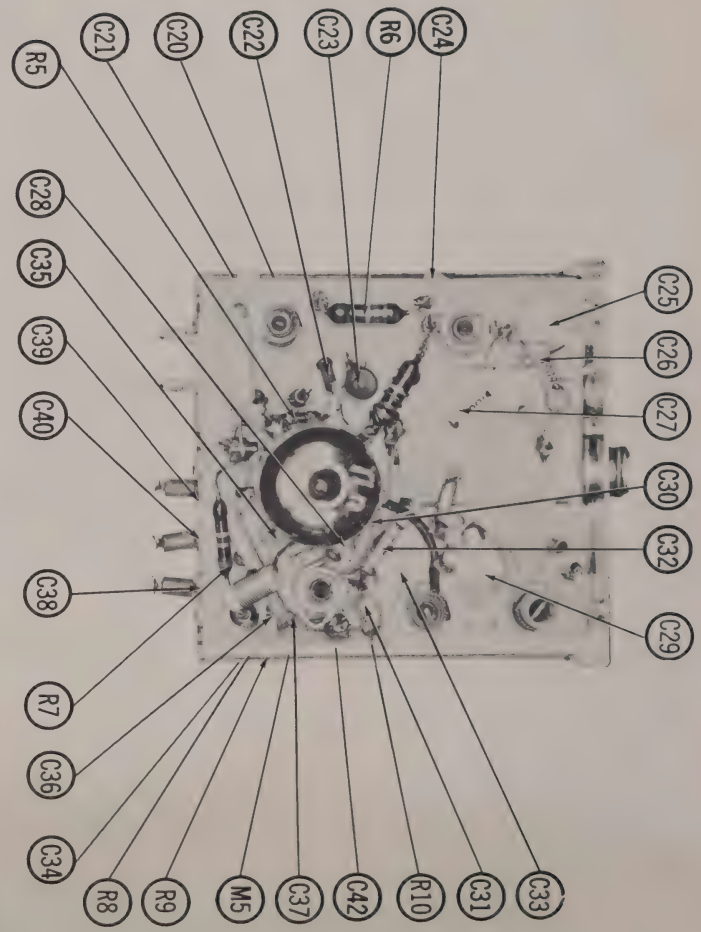
ITEM No.	RATING CAP.	RATING VOLT.	REPLACEMENT DATA NORDMENDE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	NOTES
C1A	■100	350	443.023.14						
B	▲100	350							
C2	16	350	443.011.14	PRS1640	BR1635	TC64	TD-16-350	TVA-1607	
C3	4	350	443.008.15	PRS1600	BR435	TC697	TD-4-450	TVA-1601	
C4	4	70	443.062.15	PRS1400	BBR4-150	TT150X4	TD-4-150	TVA-1402	
C5	250	35	443.077.15						
C6	250	35	443.077.15						

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	REMARKS	REPLACEMENT DATA AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C7	40 N750		N750-SI 39	TCN-39	C10Q39U	CCTN-39	CN7-439	10TCU-Q39
C8	40 N750		N750-SI 39	TCN-39	C10Q39U	CCTN-39	CN7-439	10TCU-Q39
C9	30 N150					*		10TCP-Q33
C10	1000		SI 1000	D6-102	BYA10D1	CCD-102	B-210	5HK-D10
C11	5		NPO-SI 5.0	TCZ-4R7	C10V5C	CCTO-050	CNO-547	10TCC-V50
C12	3-30							
C13	10 N750		N750-DI 10	TCN-10	C10Q1U	CCTN-100	CN7-410	10TCU-Q10
C14	3-30							
C15	2000		SI 2000	D6-202	BYA10D2	CCD-202	B-220	5HK-D20
C16	24 1%		NPO-SI 24	TCZ-24	C10Q24C	CCTO-240	CNO-425	10TCC-Q25
C17	15		SI 15	D6-150	L10Q15	CCD-150	GP415	10TS-Q15
C18	2000 5%				5R5D2	CM-19B-202J	MCE457	MS-22
C19	3-30							
C20	25 N150					*		10TCP-Q27
C21	15 N150					*		10TCP-Q15
C22	51 N750		N750-SI 51	TCN-51	C10Q51U			
C23	470		BPD-00047	DD-471	BYA10T47	CCD-471	B-347	10TS-T47
C24	2200		SI 2200	D6-222	BYA10D22	CCD-222	B-222	5HK-D22
C25	3-12							
C26	60 N150					*		
C27	10 NPO		NPO-SI 10	TCZ-10	C10Q1C	CCTO-100	CNO-410	10TCC-Q10
C28	7 NPO		NPO-SI 6.8	TCZ-6R8	C10V7C	CCTO-6R8	CNO-568	10TCC-V68
C29	3-12							
C30	10 NPO		NPO-SI 10	TCZ-10	C10Q1C	CCTO-100	CNO-410	10TCC-Q10
C31	3 N220					*		10TCR-V30
C32	40 1%		NPO-SI 39	TCZ-39	C10Q39C	CCTO-390	CNO-439	10TCC-Q39
C33	4-11					*		
C34	10 N075							
C35	7 NPO		NPO-SI 6.8	TCZ-6R8	C10V7C	CCTO-6R8	CNO-568	10TCC-V68
C36	50 N750		N750-SI 50	TCN-50	C10Q50U			
C37	300 N750		N750-SI 300	TCN-300	C10T3U	CCTN-301	CN7-333	10TCU-T33

FM RF SUBCHASSIS



PARTS LIST AND DESCRIPTIONS (Continued)

FIXED CAPACITORS (cont)

ITEM No.	RATING	REMARKS	REPLACEMENT DATA: AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C38	1000		EF-001	MFT-1000		CCF-102	CT280A	
C39	1000		EF-001	MFT-1000		CCF-102	CT280A	
C40	1000		EF-001	MFT-1000		CCF-102	CT280A	
C41	1000		SI 1000	D6-102	BYA10D1	CCD-102	B-210	5HK-D10
C42	20 N150					*		10TCP-Q22
C43	56 N750		N750-SI 56	TCN-56	C10Q56U	CCTN-560	CN7-456	10TCU-Q56
C44	4700		SI 4700	D6-472	BYA10D47M	CCD-472	B-247	5HK-D47
C45	4700 5%				1R5D47	CM-20B-472J	MCJ464	MS-247
C46	4700		BPD-0047	DD-472	BYA10D47M	CCD-472	B-247	5HK-D47
C47	3-30							
C48	51 10%		NPO-SI 51	D6-500	L10Q51	CCD-500	GP450	10TS-Q50
C49	1000		SI 1000	D6-102	BYA10D1	CCD-102	B-210	5HK-D10
C50	40		SI 39	D6-400	L10Q39	CCD-390	GP439	10TS-Q39
C51	150 10%		NPO-SI 150	D6-151	L10T15	CCD-151	GP315	10TS-T15
C52	10 10%		NPO-SI 10	D6-100	L10Q1	CCD-100	GP410	10TS-Q10
C53	6000		SI 6000	DD16-602	HVE16D6			30GA-D60
C54	410		SI 390	D6-401	L10T42	CCD-411	GP340	10TS-T40
C55	.047 250V		P488N-047	DD-503	CUB4S47	4DP-3-473	GEM-4147	4TM-S47
C56	180 N470					*		
C57	4700		SI 4700	D6-472	BYA10D47M	CCD-472	B-247	5HK-D47
C58	4700		SI 4700	D6-472	BYA10D47M	CCD-472	B-247	5HK-D47
C59	.022 250V		P488N-022	DD-203	CUB4S22	4DP-2-223	GEM-4122	4TM-S22
C60	.1 250V		P488N-1	DF-104	CUB4P1	4DP-3-104	GEM-201	4TM-P10
C61	4700		SI 4700	D6-472	BYA10D47M	CCD-472	B-247	5HK-D47
C62	51 N750		N750-SI 51	TCN-51	C10Q51U			
C63	7 N750				C10V7U		CN7-568	
C64	4700		SI 4700	D6-472	BYA10D47M	CCD-472	B-247	5HK-D47
C65	4700 5%				1R5D47	CM-20-472J	MCJ464	MS-247
C66	4700		BPD-0047	DD-472	BYA10D47M	CCD-472	B-247	5HK-D47
C67	.0047 500V		P688N-0047	D6-472	CUB6D47	6DP-1-472	GEM-6247	6TM-D47
C68	470 5%				5R5T47	CM-19B-471J	MCJ244	MS-347
C69	470 5%				5R5T47	CM-19B-471J	MCJ244	MS-347
C70	4700		BPD-0047	DD-472	BYA10D47M	CCD-472	B-247	5HK-D47
C71	4700		BPD-0047	DD-472	BYA10D47M	CCD-472	B-247	5HK-D47
C72	470 5%				5R5T47	CM-19B-471J	MCJ244	MS-347
C73	.0022 500V		P688N-0022	D6-222	CUB6D22	6DP-1-222	GEM-622	6TM-D22
C74	1000		SI 1000	D6-102	BYA10D1	CCD-102	B-210	5HK-D10
C75	.015 250V		P488N-015	DD-153	CUB6S15	4DP-1-153	GEM-4115	4TM-S15
C76	.015 *250V		P488N-015	DD-153	CUB6S15	4DP-1-153	GEM-4115	4TM-S15
C77	300 5%			TCZ-300	22R5T3	CM-19B-301J	MCE241	MS-33
C78	240 5%			TCZ-240	22R5T24	CM-19B-241J	MCE240	MS-324
C79	.01 250V		P488N-01	D6-103	CUB4S1	4DP-1-103	GEM-411	4TM-S10
C80	.015 250V		P488N-015	DD-153	CUB6S15	4DP-1-153	GEM-4115	4TM-S15
C81	.0047 500V		P688N-0047	D6-472	CUB6D47	6DP-1-472	GEM-6247	6TM-D47
C82	51		SI 51	D6-500	L10Q51	CCD-500	GP450	10TS-Q50
C83	.01 250V		P488N-01	D6-103	CUB4S1	4DP-1-103	GEM-411	4TM-S10
C84	.01 250V		P488N-01	D6-103	CUB4S1	4DP-1-103	GEM-411	4TM-S10
C85	82		SI 82	D6-820	L10Q82	CCD-820	GP482	10TS-Q82
C86	.01 250V	Note 1				*		
C87	100		SI 100	D6-101	L10T1	CCD-101	GP310	10TS-T10
C88	.1 500V		P688N-1	DF-104	CUB6P1	6DP-4-104	GEM-601	6TM-P10
C89	.01 500V		P688N-01	D6-103	CUB6S1	6DP-2-103	GEM-611	6TM-S10
C90	470		SI 470	D6-471	BYA10T47	CCD-471	B-347	10TS-T47
C91	.0047 500V		P688N-0047	D6-472	CUB6D47	6DP-1-472	GEM-6247	6TM-D47
C92	.1 250V		P488N-1	DF-104	CUB4P1	4DP-3-104	GEM-401	4TM-P10
C93	.025 250V		P488N-025		DPMS6S25	4DP-2-253	GEM-4125	4TM-S25
C94	.047 250V		P488N-047	DD-503	CUB4S47	4DP-3-473	GEM-4147	4TM-S47
C95	.01 500V		P688N-01	D6-103	CUB6S1	6DP-2-103	GEM-611	6TM-S10
C96	.001 1000V		P1088N-001	DD-102	CUB10D1	16DP-2-102	GEM-1021	10TS-D10
C97	.0068 500V		P688N-0068	D6-682	CUB6D68	6DP-1-682	GEM-6268	6TM-D68
C98	300 5%			TCZ-300	22R5T3	CM-19B-301J	MCE241	MS-33
C99	240 5%			TCZ-240	22R5T24	CM-19B-241J	MCE240	MS-324
C100	.01 250V		P488N-01	D6-103	CUB4S1	4DP-1-103	GEM-411	4TM-S10
C101	.015 250V		P488N-015	DD16-153	CUB6S15	4DP-1-153	GEM-4115	4TM-S15
C102	.0047 250V		P488N-0047	D6-472	CUB6D47	6DP-1-472	GEM-6247	6TM-D47
C103	51		SI 51	D6-500	L10Q51	CCD-500	GP450	10TS-Q50
C104	.01 250V		P488N-01	D6-103	CUB4S1	4DP-1-103	GEM-411	4TM-S10
C105	.01 250V		P488N-01	D6-103	CUB4S1	4DP-1-103	GEM-411	4TM-S10
C106	82		SI 82	D6-820	L10Q82	CCD-820	GP482	10TS-Q82

FIXED CAPACITORS (cont)

ITEM No.	RATING	REMARKS	REPLACEMENT DATA: AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C107	.01 250V	Note 1						
C108	100		SI 100	D6-101	L10T1	CCD-101	GP310	10TS-T10
C109	.1 500V		P688N-1	DF-104	CUB6P1	6DP-4-104	GEM-601	6TM-P10
C110	.01 500V		P688N-01	D6-103	CUB6S1	6DP-2-103	GEM-611	6TM-S10
C111	470		SI 470	D6-471	BYA10T47	CCD-471	B-347	10TS-T47
C112	.0047 500V		P688N-0047	D6-472	CUB6D47	6DP-1-472	GEM-6247	6TM-D47
C113	.1 250V		P488N-1	DF-104	CUB4P1	4DP-3-104	GEM-401	4TM-P10
C114	.025 250V		P488N-025		DPMS6S25	4DP-2-253	GEM-4125	4TM-S25
C115	.047 250V		P488N-047	DD-503	CUB4S47	4DP-3-473	GEM-4147	4TM-S47
C116	.01 500V		P688N-01	D6-103	CUB6S1	6DP-2-103	GEM-611	6TM-S10
C117	.001 1000V		P1088N-001	DD-102	CUB10D1	16DP-1-102	GEM-1021	10TM-D10
C118	.0068 500V		P688N-0068	D6-682	CUB6D68	6DP-1-682	GEM-6268	6TM-D68
C119	4700		BPD-0047	DD-472	BYA10D47M	CCD-472	B-247	5HK-D47
C120	4700		BPD-0047	DD-472	BYA10D47M	CCD-472	B-247	5HK-D47
C121	4				C10V4C			

* Not normally in distributor's stock. Available thru distributor on order to manufacturer.
Note 1. Shielded unit.

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: NORDMENDE PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	1.4meg*	½	402.199.14					Volume, Left Channel
B	1.4meg*	½						Volume, Right Channel
C	Switch							AFC Sens. (Push-Pull)
R2	1meg	½	402.141.14					Balance
R3A	10meg	½	402.195.14					Bass, Left Channel
B	10meg	½						Bass, Right Channel
R4A	1meg	½	402.196.14					Treble, Right Channel
B	1meg	½						Treble, Left Channel

* Taps @ 100K, 400K, 1meg.

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REPLACEMENT DATA: IRC PART No.	WORKMAN TV PART No.	REMARKS
R5	1meg			
R6	2200Ω			
R7	1meg			
R8	20K 1W			
R9	560K			
R10	30meg			
R11	1.5meg			
R12	1000Ω			
R13	47K 1W			
R14	120Ω			
R15	47K			
R16	100Ω			
R17	33K 1W			
R18	1meg			
R19	1000Ω			
R20	47K 1W			
R21	100Ω			
R22	180K			
R23	22K			
R24	1.5meg			
R25	10meg			
R26	56K			
R27	330K			
R28	10K 1W			
R29	100K 1W			
R30	470K			
R31	100K			

ITEM No.	RATING	REPLACEMENT DATA: IRC PART No.	WORKMAN TV PART No.	REMARKS
R32	1meg			
R33	560K			
R34	220Ω			
R35	220Ω			
R36	15K			
R37	15K			
R38	360Ω			
R39	22K			
R40	22K			
R41	470K			
R42	22K			
R43	820K			
R44	820K			
R45	100K			
R46	100K			
R47	39K			
R48	39K			
R49	120K			
R50	82K			
R51	220K			
R52	47K			
R53	10meg			
R54	33K			
R55	100K 1W			
R56	820K			
R57	220K			
R58	2700Ω			

PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS (cont)

ITEM No.	RATING	REPLACEMENT DATA IRC PART No.	WORKMAN TV PART No.	REMARKS
R59	2200Ω			
R60	1000Ω			
R61	1000Ω			
R62	5600Ω			
R63	680K			
R64	100K			
R65	220Ω 1W			
R66	47K 1W			
R67	120K			
R68	82K			
R69	220K			
R70	47K			
R71	10meg			
R72	33K			
R73	100K 1W			
R74	820K			
R75	220K			
R76	2700Ω			
R77	2200Ω			
R78	1000Ω			
R79	1000Ω			
R80	5600Ω			
R81	680K			
R82	100K			
R83	220Ω			
R84	47K 1W			
R85	10K			
R86	1000Ω 3W	PW5-1000	5W-SQ-1000	
R87	300Ω 3W	PW5-300	5W-SQ-300	

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA NORDMENDE PART No.	Merit PART No.	Miller PART No.	Stancor PART No.	Workman TV PART No.	NOTES
L1	RF Choke	520.001.24					
L2	2nd FM IF						
L3	RF Choke						
L4	460KC IF Trap	423.000.25					
L5	SW Ant.	423.240.25					
L6	BC Ant.	423.220.25					
L7	LW Ant.	423.200.25					
L8A	BC Loopstick	423.010.25					
B	LW Loopstick	423.011.25					
L9	RF Choke						
L10	SW Osc.	423.250.25					
L11	BC Osc.	423.230.25					
L12	LW Osc.	423.210.25					
L13A	3rd FM IF	520.002.24					
B	1st AM IF						
L14	2nd AM IF	520.003.24					
L15A	4th FM IF	520.004.24					
B	3rd AM IF						
L16A	Ratio Detector	520.035.24					
B	4th AM IF						
L17	Tone Choke	423.004.25					
L18	Tone Choke	423.004.25					
L19	Tone Choke	423.003.25					
L20	Tone Choke	423.004.25					
L21	Tone Choke	423.004.25					
L22	Tone Choke	423.003.25					

TRANSFORMER (POWER)

ITEM No.	RATING PRI.	SEC. 1	SEC. 2	REPLACEMENT DATA NORDMENDE PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
T1	117V @ .77A	220V @ .210A AC	6.3VCT @ 2.1A	521.029.13					
	SEC. 3	SEC. 4	SEC. 5						
	6.3V @ 2.2A								

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE PRI.	SEC.	REPLACEMENT DATA NORDMENDE PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
T2	10K	16Ω Tap @ 8Ω	522.020.13					
T3	10K	16Ω Tap @ 8Ω	522.020.13					

SPEAKER

ITEM No.	TYPE SIZE	FIELD	V. C. IMP.	REPLACEMENT DATA NORDMENDE PART No.	QUAM PART No.	NOTES
SP1	7"	PM	3-4Ω	470.050.14	7A31	Part #470.051.19 may be used in some versions.
SP2	5 1/4"	PM	3-4Ω	470.051.14	52A21Z4	
SP3	Electrostatic			470.000.13		
SP4	7"	PM	3-4Ω	470.050.14	7A31	
SP5	5 1/4"	PM	3-4Ω	470.051.14	52A21Z4	
SP6	Electrostatic			470.000.13		

POWER RECTIFIERS

ITEM No.	RATING CURRENT (Measured)	REPLACEMENT DATA NORDMENDE PART No.	RCA PART No.	SARKES TARZIAN PART No.	SYLVANIA PART No.	NOTES
M1	.110A (FM) .100A (AM)	*				* Selenium Bridge

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA NORDMENDE PART No. FUSE	NORDMENDE PART No. HOLDER	LITTELFUSE PART No. FUSE	LITTELFUSE PART No. HOLDER	BUSS PART No. FUSE	BUSS PART No. HOLDER
M2		1A * 125V 6/10A♦ 250V						
M3	1" Length #26 Wire							
M4	1" Length #26 Wire							

* For 125VAC Input.
♦ For 125VAC - 240VAC Input.

SIGNAL DIODES

ITEM No.	ORIG. TYPE	REPLACEMENT DATA NORDMENDE PART No.	GENERAL ELECTRIC PART No.	RAYTHEON PART No.	SYLVANIA PART No.	NOTES
M5	OA200	*				* FM AFC (Pigtail)

MISCELLANEOUS

ITEM No.	PART NAME	NORDMENDE PART No.	NOTES
M6	Tuner		FM, Complete
M7	Tuning Cap.		AM, 2 Gang
M8	Switch		Function Selector, (Pushbutton Type) Includes FM, SW, BC, DF, LW, Tape Record, Phono, Off.
M9	Switch		Tone (Pushbutton Type) Includes Bass, Speech, Stereo, Solo, and Brilliant.
M10	Switch		Antenna

WIRING DATA

General-use Unshielded Hook-up Wire ..... Use BELDEN No. 8530 (Solid) Available in Ten Colors
8524 (Stranded) Available in Ten Colors

Power Cord ..... Use BELDEN No. 1765-B (6 Ft. Length)
1725-K (7½ Ft. Length)

PHOTOFACT® Folder with CIRCUITRACE®

RCA VICTOR MODELS 1TP1E, 1TP1HE, 1TP1JE, 1TP2E, 1TP2J (Ch. RC-1199, A)

RCA VICTOR MODELS 1TP1E, 1TP1HE, 1TP1JE, 1TP2E, 1TP2J (Ch. RC-1199, A)

MODEL 1TP2E

TRADE NAME	RCA Victor Models 1-TP-1E, 1-TP-1HE, 1-TP-1JE (Ch. RC-1199); 1-TP-2E, 1-TP-2J (Ch. RC-1199A)
MANUFACTURER	RCA Victor Radio & "Voctrola" Div., Radio Corp., of America, Camden 8, N. J.
TYPE SET	Battery Operated Transistorized Portable AM Receiver
POWER SUPPLY	4 Volts DC RATING 20MA@4 Volts DC (No Signal, Min. Volume)
TUNING RANGE—BROADCAST	540 — 1600KC 35MA@4 Volts DC (Signal, Normal Volume)

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading.

Suggested Alignment Tools: A1, A2, A3, A6. GENERAL CEMENT #5009, 8195, 8274, 8275, 8728, 8729, 8987, 8988, 8989
WALSCO #2515, 2531, 2532
A4, A5..... GENERAL CEMENT #5004, 5008, 5009
WALSCO #2520

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	High side thru .01mfd to antenna stator lug. Low side to chassis.	455KC (400∿ Mod.)	Tuning gang fully open.	Across voice coil.	A1, A2, A3	Adjust for maximum output.
2.	Loop	1620KC	"	"	A4	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
3.	"	1400KC	1400KC Signal.	"	A5	"
4.	"	600KC	600KC Signal.	"	A6	Adjust for maximum output while rocking tuning gang.

DISASSEMBLY

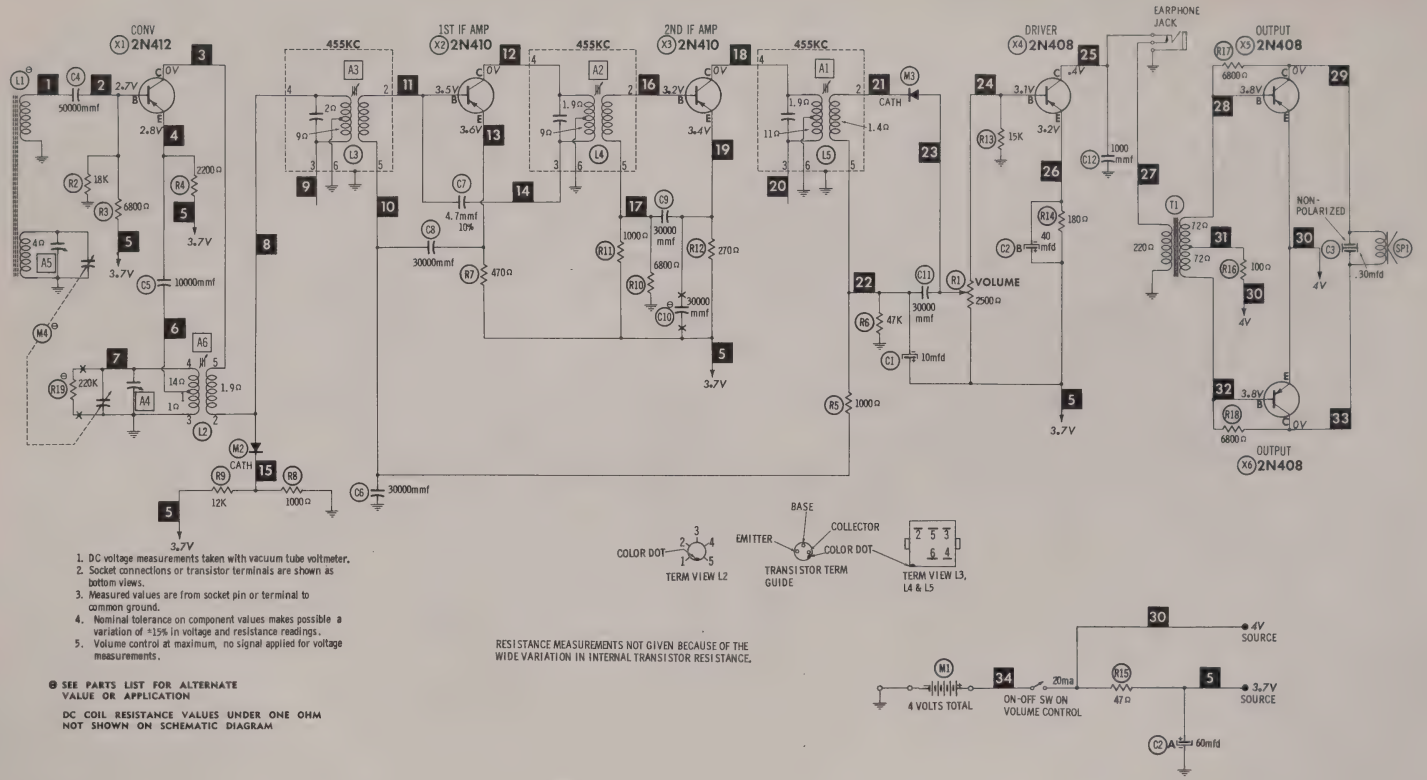
1. Unsolder Battery Contacts From Printed Board.
2. Unsolder 3 Speaker Leads (For Complete Removal Only).
3. (Model 1-TP-1 Series Only) Pull Knob From Tuning Shaft.
4. Remove Earphone Jack Mounting Nut.
5. Remove 2 Printed Board Mounting Screws. Remove Chassis.

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed. Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. © 1961 Howard W. Sams & Co., Inc., Indianapolis 6, Indiana. Printed in U.S. of America

KF292

SET 531 FOLDER 9



1. DC voltage measurements taken with vacuum tube voltmeter.
2. Socket connections or transistor terminals are shown as bottom views.
3. Measured values are from socket pin or terminal to common ground.
4. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
5. Volume control at maximum, no signal applied for voltage measurements.

⊖ SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

RESISTANCE MEASUREMENTS NOT GIVEN BECAUSE OF THE WIDE VARIATION IN INTERNAL TRANSISTOR RESISTANCE.

A PHOTOFACT STANDARD NOTATION SCHEMATIC with CIRCUITRACE

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RCA VICTOR MODELS 1TP1E, 1TP1HE, 1TP1JE, 1TP2E, 1TP2J (Ch. RC-1199, A)

PARTS LIST AND DESCRIPTIONS

WIRING DATA

General-use Unshielded Hook-up Wire .....Use BELDEN No. 8530 (Solid) Available in Ten Colors
8524 (Stranded) Available in Ten Colors

TRANSISTORS

ITEM No.	ORIG. TYPE	USE	REPLACEMENT DATA			NOTES
			RCA PART No.	RAYTHEON PART No.	SYLVANIA PART No.	
X1	2N412	Converter	2N412	2N486	2N412	PNP
X2	2N410	1st IF Amplifier	2N410	2N483	2N410	PNP
X3	2N410	2nd IF Amplifier	2N410	2N483	2N410	PNP
X4	2N408	Driver	2N408	2N362	2N408	PNP
X5	2N408	Output	2N408	2N633	2N408	PNP
X6	2N408	Output	2N408	2N633	2N408	PNP

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						NOTES
	CAP.	VOLT.	RCA VICTOR PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	
C1	10	4	108872	BCD6010	ECPB108	PET1340	ML10-6	TE-1087	
C2A	60	4	108873						
B	40	4							
C3	.30	25NP	108885						

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C4	50000 10V		C80V503AM	DA-503				TG-S50
C5	10000 100V		C80V103AM	DDM-103	H-05S1		BT-110	TH-S10
C6	30000 100V	#108168						TH-S30
C7	4.7 10%		NPO-SI 4.7	TCZ-4R7	C10V47C	CCTO-4R7	CNO-547	10TCC-V47
C8	30000 100V	#108168						TH-S30
C9	30000 100V	#108168						TH-S30
C10	30000 100V	Note 1						TH-S30
C11	30000 100V	#108168						
C12	1000 100V		C80V102AM	DM-102	H-05D1	CCD-102	GP210	TG-S10

Note 1. Not used in some versions.
RCA Victor Part Number.

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	RCA VICTOR PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	
R1	2500Ω	1/10	108879					Volume & Switch

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REPLACEMENT DATA			ITEM No.	RATING	REPLACEMENT DATA		
		IRC PART No.	WORKMAN TV PART No.	REMARKS			IRC PART No.	WORKMAN TV PART No.	REMARKS
R2	18K				R11	1000Ω			
R3	6800Ω				R12	270Ω			
R4	2200Ω				R13	15K			
R5	1000Ω				R14	180Ω			
R6	47K				R15	47Ω			
R7	470Ω				R16	100Ω			
R8	1000Ω				R17	6800Ω			
R9	12K				R18	6800Ω			
R10	6800Ω				R19	220K			Note 1

Note 1. Not used in some versions.

PRINTED BOARD

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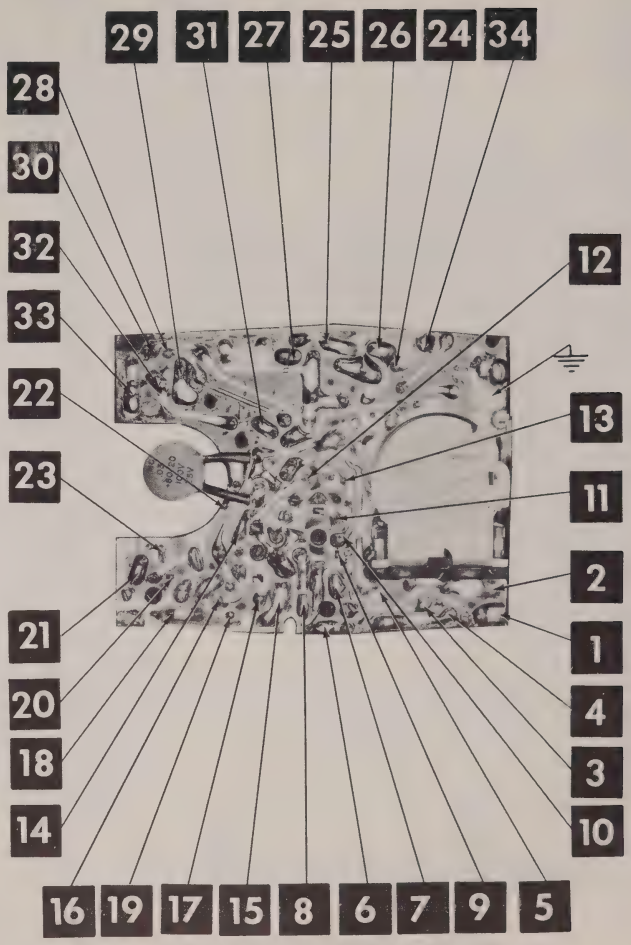


RCA VICTOR MODELS 17P1E, 17P1HE, 17P1LE, 17P2E, 17P2J (Ch. RC-1199, A)

FOLDER 9

PARTS LIST AND DESCRIPTIONS (Continued)

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA				NOTES
		RCA VICTOR PART No.	Merit PART No.	Miller PART No.	Stancor PART No.	
L1	Loopstick	108876 ①				①Part #108875 used in 1-TP-1 Series.
L2	Osc. Coil	108880				
L3	1st IF Trans.	108881				
L4	2nd IF Trans.	108882				
L5	3rd IF Trans.	108883				

TRANSFORMER (DRIVER)

ITEM No.	TURNS RATIO		REPLACEMENT DATA					NOTES
	PRI.	SEC.	RCA VICTOR PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T1	1.8	1	108884					

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP.	RCA VICTOR PART No.	QUAM PART No.	
SP1	2"	PM	95-105Ω CT	108920		

BATTERIES

ITEM No.	VOLTAGE	RCA VICTOR PART No.	REPLACEMENT DATA						NOTES
			BURGESS		EVEREADY		MALLORY		
			"A"	"B"	"A"	"B"	"A"	"B"	
M1	4V	VS-149 *				E-133 *		TR-133*	* Mercury Type

SIGNAL DIODES

ITEM No.	ORIG. TYPE	REPLACEMENT DATA				NOTES
		RCA VICTOR PART No.	GENERAL ELECTRIC PART No.	RAYTHEON PART No.	SYLVANIA PART No.	
M2		101615		1N60	1N60	Overload, AVC (Pigtail)
M3		101615		1N60	1N60	Detector (Pigtail)

MISCELLANEOUS

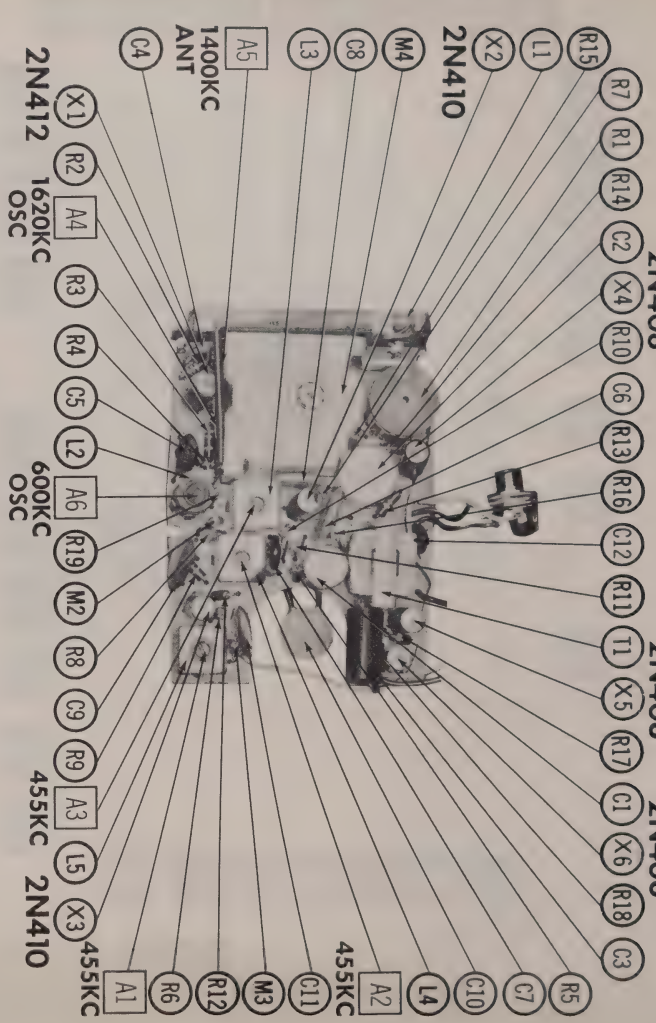
ITEM No.	PART NAME	RCA VICTOR PART No.	NOTES
M4	Tuning Cap.	108877	2 Gang, Model 1-TP-2 Series
	Tuning Cap.	108878	2 Gang, Model 1-TP-1 Series
	Printed Board	108901	Less Antenna, Tuning Cap, Volume Control, Earphone Jack & Transistors.

CABINETS & CABINET PARTS

(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

NAME	PART NO.	DESCRIPTION
Window	108895	Tuning, Models 1-TP-2E, 1-TP-2J
Dial	108886	Models 1-TP-1E, 1-TP-1HE
Dial	108887	Model 1-TP-1JE
Dial	108888	Models 1-TP-2E, 1-TP-2J
Knob	108892	Tuning, Model 1-TP-1 Series
Knob	108893	Tuning, Champagne White, Model 1-TP-2E
Knob	108894	Tuning, Charcoal, Model 1-TP-2J
Knob	108890	Volume, Bermuda Turquoise, Model 1-TP-1HE
Knob	108891	Volume, Champagne White, Models 1-TP-1E, 1-TP-2E
Knob	108889	Volume, Charcoal, Models 1-TP-1JE, 1-TP-2J
Cabinet	Y7103	Bermuda Turquoise/Champagne White, Model 1-TP-1HE
Cabinet	Y7101	Champagne White, Model 1-TP-1E
Cabinet	Y7104	Champagne White, Model 1-TP-2E
Cabinet	Y7102	Charcoal/Champagne White, Model 1-TP-1JE
Cabinet	Y7105	Charcoal, Model 1-TP-2J

CHASSIS—TOP VIEW



PHOTOFACT® Folder with CIRCUITRACE®

SONY MODELS TR-710A, TR-710L

SONY MODELS
TR-710A, TR-710L

MODEL TR-710-A

TRADE NAME	Sony Models TR-710-A, TR-710-L		
IMPORTER	Sony Corp. of America, 514 Broadway, New York 12, N. Y.		
TYPE SET	Battery Operated Transistorized Portable Receiver		
POWER SUPPLY	3 Volts DC	RATING	15MA @ 3 Volts DC (No Signal, Min. Volume) 20MA @ 3 Volts DC (Signal, Normal Volume)
TUNING RANGE—BROADCAST	535 – 1605KC	SHORT WAVE	1.5—4.5MC (Model TR-710-A)
		LONG WAVE	150-350KC (Model TR-710-L)

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading.

Suggested Alignment Tools:
A1, A2, A3..... GENERAL CEMENT #5004, 5009, 8195, 8274, 8275, 8607, 8728, 8987, 8988, 8989, 9291
WALSCO #2515, 2520, 2522, 2523, 2531, 2532, 2534, 2537, 2538
A4, A7, A8, A11..... GENERAL CEMENT #5000, 5003, 5066, 8276, 8290, 9087, 9089
WALSCO #2512, 2525, 2528
A5, A9..... GENERAL CEMENT #9440

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	Loop	455KC (400~ Mod.)	(BC) Tuning gang fully open.	Across voice coil.	A1, A2, A3	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
2.	"	1605KC	"	"	A4	"
3.	"	600KC	600KC	"	A5, A6	"
4.	"	1400KC	1400KC Signal.	"	A7	"
	MODEL TR-710A ONLY					
5.	"	4.5MC	4.5MC	"	A8	"
6.	"	1.5MC	1.5MC	"	A9, A10	"
7.	"	4MC	4MC	"	A11	Adjust for maximum output. Repeat Steps 2 thru 7 is necessary.
	MODEL TR-710-L ONLY					
5.	"	350KC	(LW) 350KC	"	A8	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
6.	"	150KC	150KC	"	A9, A10	"
7.	"	300KC	300KC	"	A11	Adjust for maximum output. Repeat Steps 2 thru 7 if necessary.

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

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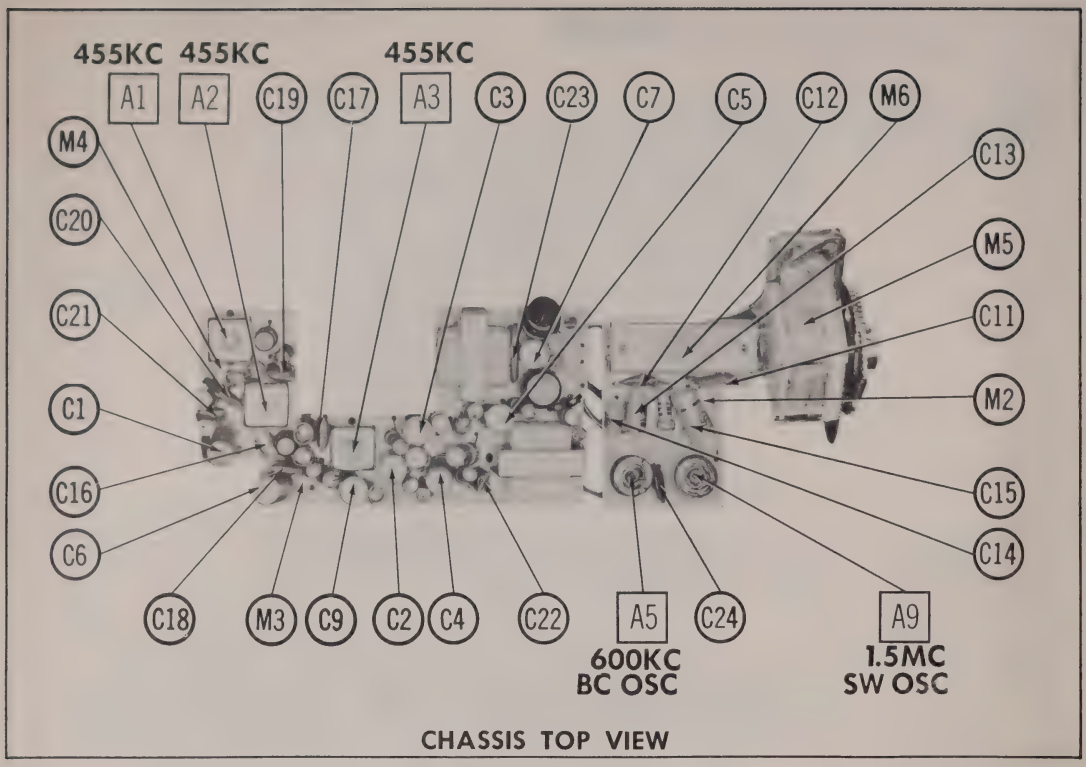
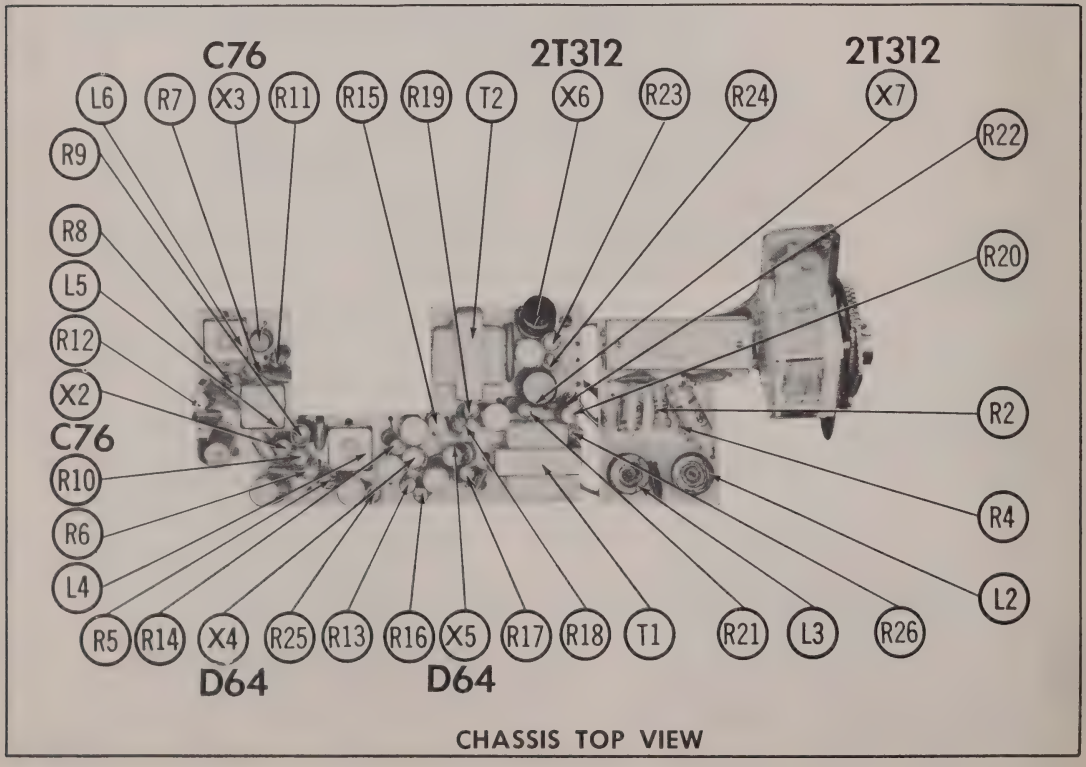
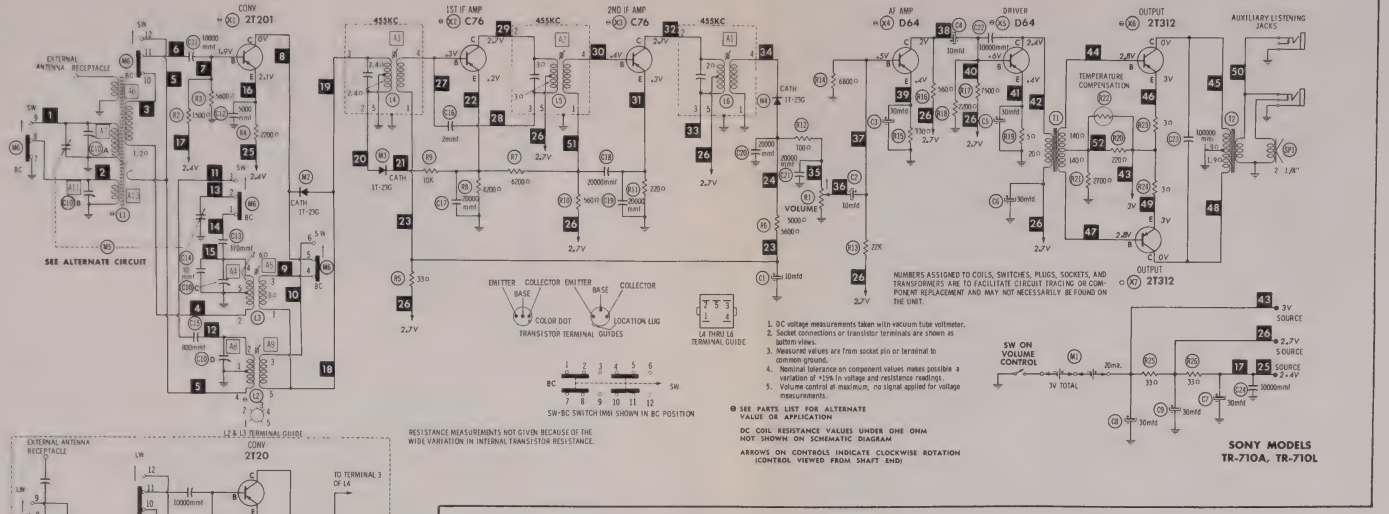
SET 531 FOLDER 10



CHASSIS TOP VIEW



CHASSIS TOP VIEW



NUMBERS ASSIGNED TO COILS, SWITCHES, PLUGS, SOCKETS, AND TRANSFORMERS ARE TO FACILITATE CIRCUIT TRACING OR COMPONENT REPLACEMENT AND MAY NOT NECESSARILY BE FOUND ON THE UNIT.

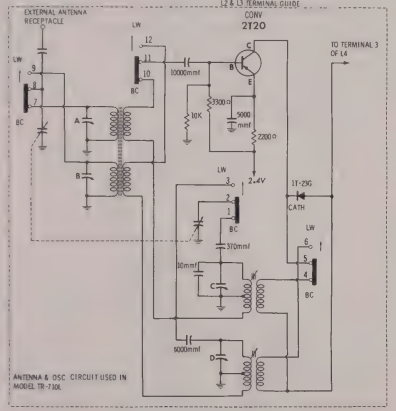
1. DC voltage measurements taken with vacuum tube voltmeter.
2. Socket connections or transistor terminals are shown as bottom views.
3. Measured values are from socket pin or terminal to common ground.
4. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
5. Volume control at maximum, no signal applied for voltage measurements.

⊕ SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION (CONTROL VIEWED FROM SHAFT END)

RESISTANCE MEASUREMENTS NOT GIVEN BECAUSE OF THE WIDE VARIATION IN INTERNAL TRANSISTOR RESISTANCE.



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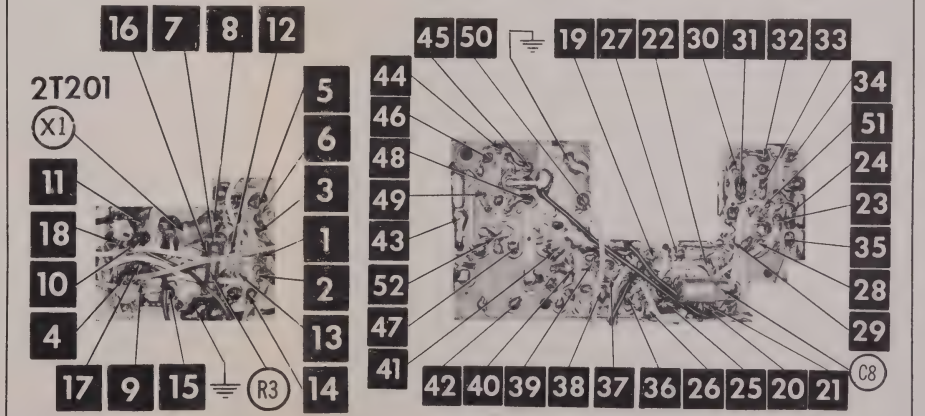

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PRINTED BOARD

PARTS LIST AND DESCRIPTIONS

TRANSISTORS

ITEM No.	ORIG. TYPE	USE	REPLACEMENT DATA			NOTES
			RCA PART No.	RAYTHEON PART No.	SYLVANIA PART No.	
X1	2T201	Converter	2N412			PNP
	2T-20*	Converter				
X2	C-76	1st IF Amplifier				NPN
	2T-76*	1st IF Amplifier				
X3	C76	2nd IF Amplifier				NPN
	2T-76*	2nd IF Amplifier				
X4	D64	AF Amplifier	2N649			NPN
	2T-65*	AF Amplifier				
X5	D64	Driver	2N649			NPN
	2T-65*	Driver				
X6	2T312	Output	2N408			PNP
	2T-32*	Output				
X7	2T312	Output	2N408			PNP
	2T-32*	Output				

* Alternate

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						NOTES
	CAP.	VOLT.	SONY PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	
C1	10	3		PTT-3010	NLW10-3	PET1340	MLV10-3	TE-1053	
C2	10	3		PTT-3010	NLW10-3	PET1340	MLV10-3	TE-1053	
C3	30	3		PTT-3030	NLW30-6	PET130	MLV30-6	TE-1092	
C4	10	3		PTT-3010	NLW10-3	PET1340	MLV10-3	TE-1053	
C5	30	3		PTT-3030	NLW30-6	PET130	MLV30-6	TE-1092	
C6	30	3		PTT-3030	NLW30-6	PET130	MLV30-6	TE-1092	
C7	30	3		PTT-3030	NLW30-6	PET130	MLV30-6	TE-1092	
C8	30	3		PTT-3030	NLW30-6	PET130	MLV30-6	TE-1092	
C9	30	3		PTT-3030	NLW30-6	PET130	MLV30-6	TE-1092	

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C10A B C D								
C11	10000		C80V103AM	DM-103	H-05S1		TA-110	TG-S10

FIXED CAPACITORS (cont)

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C12	5000		C80V502AM	DM-502	H-05D5	CCD-502	TA-250	TG-D50
C13	370		SI 390	D6-391	L10T39	CCD-391	GP339	10TS-T39
C14	10		SI 10	D6-100	L10Q1	CCD-100	GP410	10TS-Q10
C15	800		SI 820	D6-821	L10T8	CCD-801	GP382	10TS-T80
C16	2		NPO-SI 2.0	TCZ-2R2	C10V2C	CCTO-2R2	CNO-522	10TCC-V22
C17	20000		C80V203AM	DA-203	H-05S2		TA-120	TG-S20
C18	20000		C80V203AM	DA-203	H-05S2		TA-120	TG-S20
C19	20000		C80V203AM	DA-203	H-05S2		TA-120	TG-S20
C20	20000		C80V203AM	DA-203	H-05S2		TA-120	TG-S20
C21	20000		C80V203AM	DA-203	H-05S2		TA-120	TG-S20
C22	10000		C80V103AM	DM-103	H-05S1		TA-110	TG-S10
C23	100000		C80V104AM	DA-104	H-05P1		TA-010	TG-P10
C24	10000		C80V103AM	DM-103	H-05S1		TA-110	TG-S10

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	SONY PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	
R1	5000Ω	1/10						Volume & Switch

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REPLACEMENT DATA			ITEM No.	RATING	REPLACEMENT DATA		
		IRC PART No.	WORKMAN TV PART No.	REMARKS			IRC PART No.	WORKMAN TV PART No.	REMARKS
R2	1500Ω				R15	330Ω			
R3	5600Ω				R16	560Ω			
R4	2200Ω				R17	7500Ω			
R5	33Ω				R18	2200Ω			
R6	5600Ω				R19	5.0Ω			
R7	6200Ω				R20	220Ω			
R8	4200Ω				R21	2700Ω			
R9	10K				R22	Temp. Comp.			Pt. #S-250
R10	560Ω				R23	3.0Ω			
R11	220Ω				R24	3.0Ω			
R12	100Ω				R25	33Ω			
R13	22K				R26	33Ω			
R14	6800Ω								

PARTS LIST AND DESCRIPTIONS (Continued)

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA: SONY PART No.	Merit PART No.	Miller PART No.	Stancor PART No.	Workman TV PART No.	NOTES
L1A	SW Loopstick	LA-030-IJ ①					① Part #1-401 used in TR-710L ② Part #1-405-053-14 used in TR-710L.
B	BC Loopstick						
L2	SW Osc.	LO-012-Q ②					
L3	BC Osc.	LO-011-Q					
L4	1st IF	LI-020-AP					
L5	2nd IF	LI-008-BP					
L6	3rd IF	LI-008-CP					

TRANSFORMER (DRIVER)

ITEM No.	TURNS RATIO PRI.	TURNS RATIO SEC.	REPLACEMENT DATA: SONY PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
T1	.7	1	T1-007					

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE PRI.	IMPEDANCE SEC.	REPLACEMENT DATA: SONY PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
T2	72Ω CT	6-8Ω	TX-008					

SPEAKER

ITEM No.	TYPE SIZE	TYPE FIELD	TYPE V. C. IMP.	REPLACEMENT DATA: SONY PART No.	QUAM PART No.	NOTES
SP1	2 1/4"	PM	6-8Ω	A029-512	22A06Z8	

BATTERIES

ITEM No.	VOLTAGE	SONY PART No.	REPLACEMENT DATA: BURGESS "A"	BURGESS "B"	EVEREADY "A"	EVEREADY "B"	MALLORY "A"	MALLORY "B"	NOTES
M1	1.5V	UM-1 *		230 *		A 100 *		M-13R*	* 2 Required

SIGNAL DIODES

ITEM No.	ORIG. TYPE	REPLACEMENT DATA: SONY PART No.	GENERAL ELECTRIC PART No.	RAYTHEON PART No.	SYLVANIA PART No.	NOTES
M2	1T-23G			1N60	1N60	SW Diode (Pigtail)
M3	1F-23G			1N60	1N60	AVC (Pigtail)
M4	1T-23G			1N60	1N60	Detector (Pigtail)

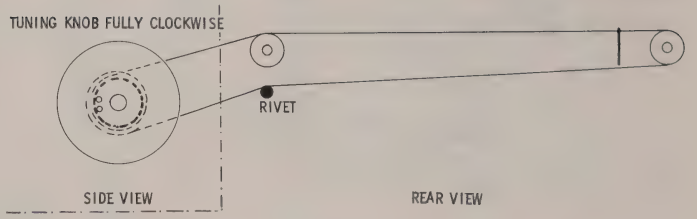
MISCELLANEOUS

ITEM No.	PART NAME	SONY PART No.	NOTES
M5	Tuning Cap.		2 Gang
M6	Band Switch		

WIRING DATA

General-use Unshielded Hook-up Wire .....Use BELDEN No. 8530 (Solid) Available in Ten Colors
8524 (Stranded) Available in Ten Colors

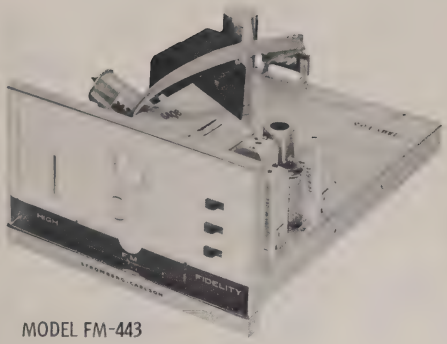
DIAL CORD STRINGING



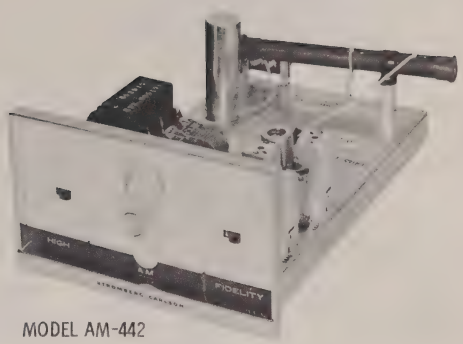
PHOTOFACT® Folder

STROMBERG-CARLSON MODELS AM-441, AM-442, FM-443, SR-445

STROMBERG-CARLSON MODELS
AM-441, AM-442, FM-443, SR-445



MODEL FM-443



MODEL AM-442

STROMBERG-CARLSON MODELS
AM-441, AM-442, FM-443, SR-445

TRADE NAME	Stromberg-Carlson Models AM-441, AM-442 (AM Tuners), FM-443 (FM Tuners), SR-445 (Includes AM-441 and FM-443 Tuners)		
MANUFACTURER	Stromberg-Carlson Co., A Div. of General Dynamics Corp., Commercial Products Div., 1400 N. Goodman Street, Rochester, N. Y.		
TYPE SET	AC Operated 10 Tube FM-AM Tuner		
POWER SUPPLY	110-120 Volts AC, 60 Cycles	RATING	20 Watts, .29 Amp. @117 Volts AC (FM) 19 Watts, .28 Amp. @117 Volts AC (AM)
TUNING RANGE—BROADCAST	540 — 1600KC	FREQ. MOD.	88—108MC

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

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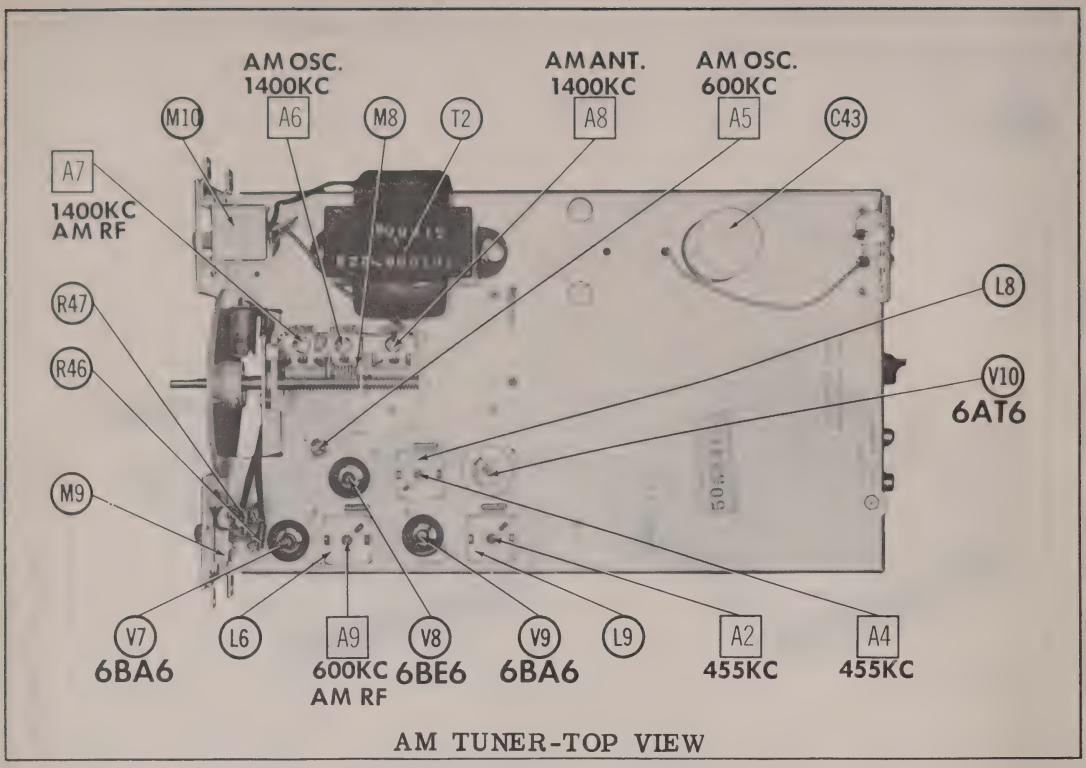
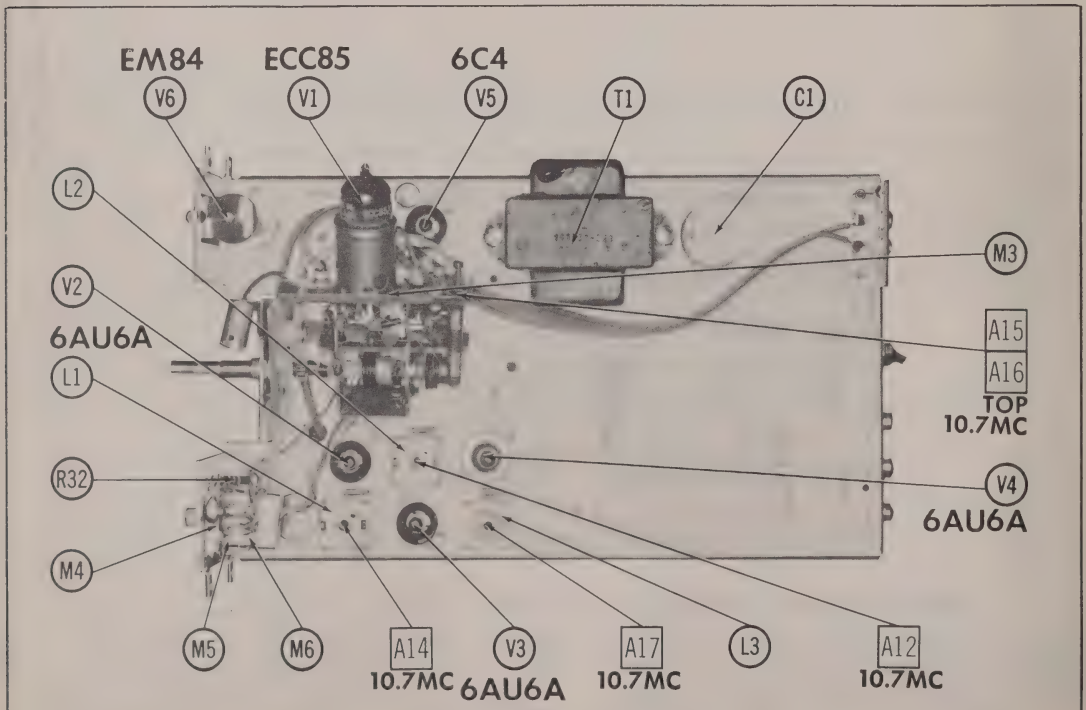
KL217

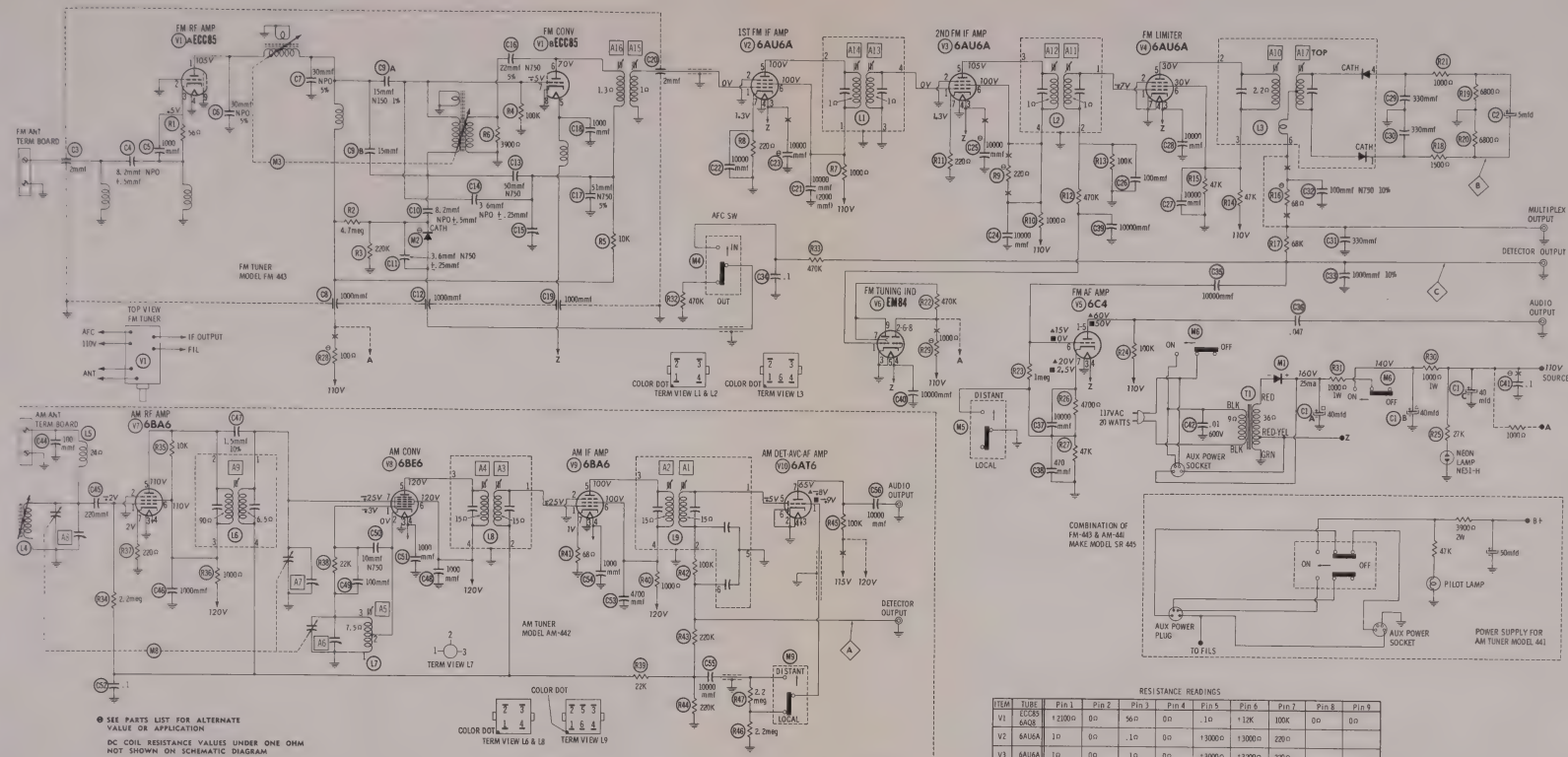
SET 531 FOLDER 11



AM TUNER-TOP VIEW



FM TUNER-TOP VIEW



❶ SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured with 1000 ohm per volt voltmeter.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common ground.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ±5% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

NUMBERS ASSIGNED TO COILS, SWITCHES, PLUGS, SOCKETS, AND TRANSFORMERS ARE TO FACILITATE CIRCUIT TRACING OR COMPONENT REPLACEMENT AND MAY NOT NECESSARILY BE FOUND ON THE UNIT.

RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	ECC85 6AQ8	†2100Ω	0Ω	56Ω	0Ω	1Ω	†12K	100K	0Ω	0Ω
V2	6AU6A	1Ω	0Ω	1Ω	0Ω	†3000Ω	†3000Ω	220Ω		
V3	6AU6A	1Ω	0Ω	1Ω	0Ω	†3000Ω	†3200Ω	220Ω		
V4	6AU6A	100K	0Ω	1Ω	0Ω	†35K	†35K	0Ω		
V5	6C4	†100K	NC	0Ω	1Ω	NC	1meg	▪4700Ω +50K		
V6	EM84 6FG6	570K	NC	0Ω	1Ω	0Ω	†3000Ω	†470K	NC	†470K
V7	6BA6	2.4meg	0Ω	0Ω	1Ω	††2000Ω	††2000Ω	220Ω		
V8	6BE6	22K	0Ω	0Ω	1Ω	†1000Ω	†1000Ω	240K		
V9	6BA6	240K	0Ω	0Ω	1Ω	†2000Ω	†2000Ω	68Ω		
V10	6AT6	▪4.4meg ▲2.2meg	0Ω	1Ω	0Ω	550K	0Ω	†110K		

† MEASURED FROM OUTPUT OF M1.
†† MEASURED FROM OUTPUT OF M7.
NC NO CONNECTION
▪ MEASURED IN "DISTANT" POSITION
▲ MEASURED IN "LOCAL" POSITION.

A PHOTOFACT STANDARD NOTATION SCHEMATIC
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STROMBERG-CARLSON MODELS AM-441, AM-442, FM-443, SR-445

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Use only enough generator output to provide a usable indication.
Set AM Dial to 55 with tuning gang fully closed.
Suggested Alignment Tools:
A1 thru A4, A9..... GENERAL CEMENT #5097, 8727
WALSCO #2515
A5..... GENERAL CEMENT #8721, 8722
WALSCO #2519
A6, A7, A8..... GENERAL CEMENT #5004, 5008, 5009
WALSCO #2520
A10 thru A14, A17.... GENERAL CEMENT #8282, 8606, 8606-L, 9295, 9440
WALSCO #2526, 2543, 2544, 2545
A15, A16..... GENERAL CEMENT #9296, 9297
WALSCO #2546, 2547

AM ALIGNMENT—SELECTOR IN AM POSITION

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
1.	High side thru .1mfd to pin 7 (grid) of AM Converter. Low side to chassis.	455KC (Unmod.)	(AM) Tuning gang fully closed.	DC probe to point Ⓐ. Common to chassis.	A1, A2, A3, A4	Adjust for maximum deflection.
2.	High side thru 200mmf to AM antenna terminal. Low side to chassis.	600KC	600KC	"	A5	"
3.	"	1400KC	1400KC	"	A6, A7, A8	"
4.	"	600KC	600KC	"	A9	Adjust for maximum deflection. Repeat Steps 2 and 3.

FM IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM—SELECTOR IN FM POSITION

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
5.	High side thru .1mfd to FM antenna terminal. Low side to chassis.	10.7MC (Unmod.)	(FM) Point of non-interference.	DC probe to point Ⓑ. Common to chassis.	A10, A11, A12, A13, A14, A15, A16	Adjust for maximum deflection.
6.	"	"	"	DC probe to point Ⓒ. Common to chassis.	A17	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

FM IF ALIGNMENT USING AM SIGNAL GENERATOR AND OSCILLOSCOPE—SELECTOR IN FM POSITION

Use frequency modulated signal with 60∿ modulation and 450KC sweep. Use 120∿ sawtooth voltage in scope for horizontal deflection.

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	CONNECT SCOPE	ADJUST	REMARKS
5.	High side thru .1mfd to FM antenna terminal. Low side to chassis.	10.7MC (450KC Swp)	(FM) Point of non-interference.	Vert. amp. to point Ⓑ. Low side to chassis.	A10, A11, A12, A13, A14, A15, A16	Disconnect stabilizing Capacitor C2. Adjust for maximum gain and symmetry of response similar to Fig. 1 with markers as shown. Reconnect C2.
6.	"	"	"	Vert. amp. to point Ⓒ Low side to chassis.	A17	Adjust to place marker at the center of crossover lines similar to Fig. 2. SLIGHTLY retouch A10 for maximum amplitude and straightness of crossover lines.

FIG. 1

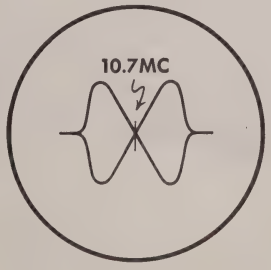


FIG. 2

FM TUNER PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	TYPE (◆ GENERAL ELECTRIC ◆ RAYTHEON ◆ SYLVANIA ◆)
V1	FM RF Amp. -FM Conv.	ECC85/6AQ8
V2	1st FM IF Amplifier	6AU6A
V3	2nd FM IF Amplifier	6AU6A
V4	FM Limiter	6AU6A
V5	FM AF Amplifier	6C4
V6	FM Tuning Indicator	EM84/6FG6

ELECTROLYTIC CAPACITORS

ITEM No.	RATING CAP.	RATING VOLT.	REPLACEMENT DATA Stromberg-Carlson PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	NOTES
C1A	■40	200	111000-075		B0240	FP221	TMD-2250	TVL-2520	
B	▲40	200			BR4025	TC48	TD-40-250	TVA-1511	
C	40	150							
C2	5	50	111093-000	PRS1310	BBR5-50	TC30	TD-5-50	TVA-1303	

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	REMARKS	REPLACEMENT DATA AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C3	2							
C4	8.2 NPO ± .5mmf		NPO-DI 8.2		C10V82C			10TCC-V82
C5	1000		BPD-001	DD-102	BYA10D2	CCD-102	B-210	5HK-D10
C6	30 NPO 5%			TCZ-30	C10Q3C	CCTO-300		10TCC-Q30
C7	30 NPO 5%			TCZ-30	C10Q3C	CCTO-300		10TCC-Q30
C8	1000		EF-001	MFT-1000		CCF-102	CT-280A	
C9A	15 N150 5%					*		10TCP-Q15
B	15 N150 5%					*		10TCP-Q15
C10	8.2 NPO ± .5mmf		NPO-DI 8.2		C10V82C			10TCC-V82
C11	3.6 N750 ± .25mmf							
C12	1000		EF-001	MFT-1000		CCF-102	CT-280A	
C13	50 N750			TCN-50	C10Q5U			
C14	3.6 NPO ± .25mmf							
C15								
C16	22 N750 5%		N750-DI 22	DTN-22	C10Q22U	CCTN-220	CN7-422	10TCU-Q22
C17	51 N750 5%			TCN-51	C10Q51U			
C18	1000		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C19	1000		EF-001	MFT-1000		CCF-102	CT-280A	
C20	2							
C21	10000	(2000) †	BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C22	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C23	10000	Note 1	BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C24	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C25	10000	Note 1	BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C26	100		DI-100	DD-101	L10T1	CCD-101	GP310	10TS-T10
C27	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C28	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C29	330		DI-330	DD-331	L10T33	CCD-331	GP333	10TS-T33
C30	330		DI-330	DD-331	L10T33	CCD-331	GP333	10TS-T33
C31	330		DI-330	DD-331	L10T33	CCD-331	GP333	10TS-T33
C32	100 N750 10%	Note 1	N750-DI 100	DTN-100	C10T1U	CCTN-101	CN7-310	10TCU-T10
C33	1000 10%		DI-1000	DD-102		CCD-102	GP210	10TS-D10
C34	.1 200V		P288N-1	DF-104	CUB2P1	2DP-3-104	GEM-201	2TM-P10
C35	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C36	.047 400V		P488N-047	DD-503	CUB4S47	4DP-3-473	GEM-4147	4TM-S47
C37	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C38	470		DI-470	DD-471	L10T47	CCD-471	B-347	10TS-T47
C39	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C40	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C41	.1 200V	Note 1	P288N-1	DF-104	CUB2P1	2DP-3-104	GEM-201	2TM-P10
C42	.01 600V		P688N-01	D6-103	CUB6S1	6DP-2-103	GEM-611	6TM-S10

* Not normally in distributor's stock. Available thru distributor on order to manufacturer.
† Alternate Value.
Note 1. Not used in some versions.

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REPLACEMENT DATA IRC PART No.	WORKMAN TV PART No.	REMARKS
R1	56Ω			
R2	4.7meg			
R3	220K			
R4	100K			
R5	10K			
R6	3900Ω			
R7	1000Ω			
R8	220Ω			
R9	220Ω			Note 1
R10	1000Ω			
R11	220Ω			
R12	470K			
R13	100K			
R14	47K			
R15	47K			
R16	68Ω			Note 1
R17	68K			
R18	1500Ω			
R19	6800Ω			
R20	6800Ω			
R21	1000Ω			
R22	470K			
R23	1meg			
R24	100K			
R25	27K			
R26	4700Ω			
R27	47K			
R28	100Ω			Note 1
R29	1000Ω			Note 1
R30	1000Ω 1W			
R31	1000Ω 1W			
R32	470K			
R33	470K			

Note 1. Not used in some versions.

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA Stromberg-Carlson PART No.	Merit PART No.	Miller PART No.	Stancor PART No.	NOTES
L1	2nd FM IF Trans.	114363-000	FM-254	1463	RTC-8599	
L2	3rd FM IF Trans.	114363-000	FM-254	1463	RTC-8599	▲Connect two 1N542 Crystals (or equivalent) Externally.
L3	Ratio Detector	114000-202	FM-255 ▲	1465 ▲	RTC-8600	

TRANSFORMER (POWER)

ITEM No.	RATING PRI.	RATING SEC. 1	REPLACEMENT DATA Stromberg-Carlson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
T1	117V ⓐ .29A	120V ⓐ .025A Tap ⓐ 6.3V ⓐ 1.8A	161000-223	P-3045 ①	PA-8421 ①	26R38 ①		① Drill New Mounting Hole.

POWER RECTIFIERS

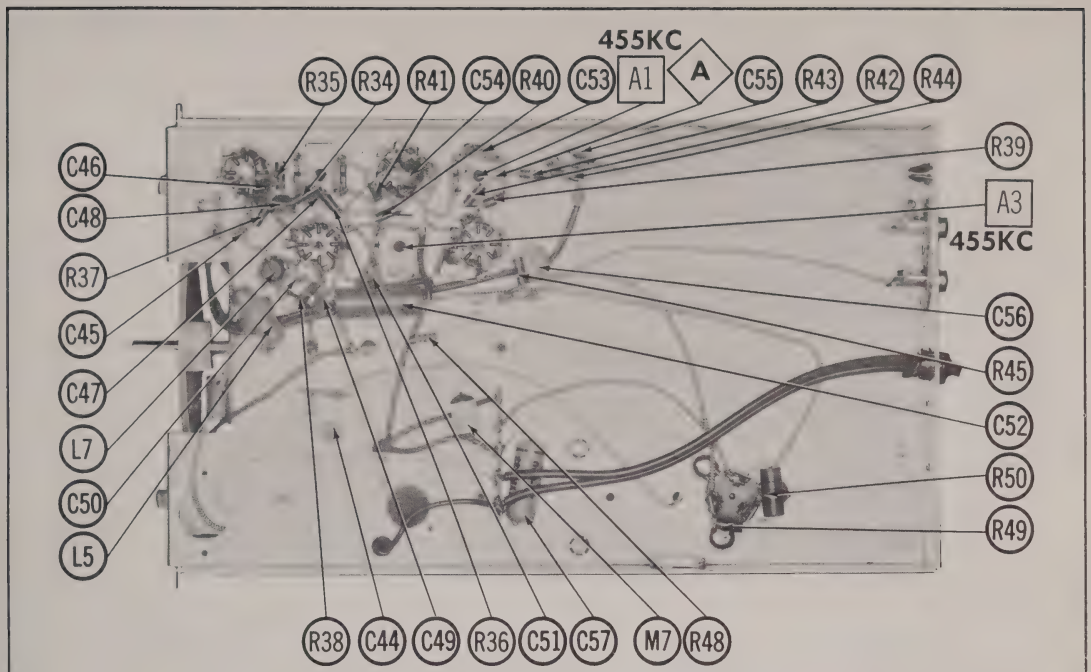
ITEM No.	RATING CURRENT (Measured)	REPLACEMENT DATA Stromberg-Carlson PART No.	RCA PART No.	SARKES TARZIAN PART No.	SYLVANIA PART No.	NOTES
M1	.025A	*	1N1763 *	40H *	SR500 *	* Silicon Type

SIGNAL DIODES

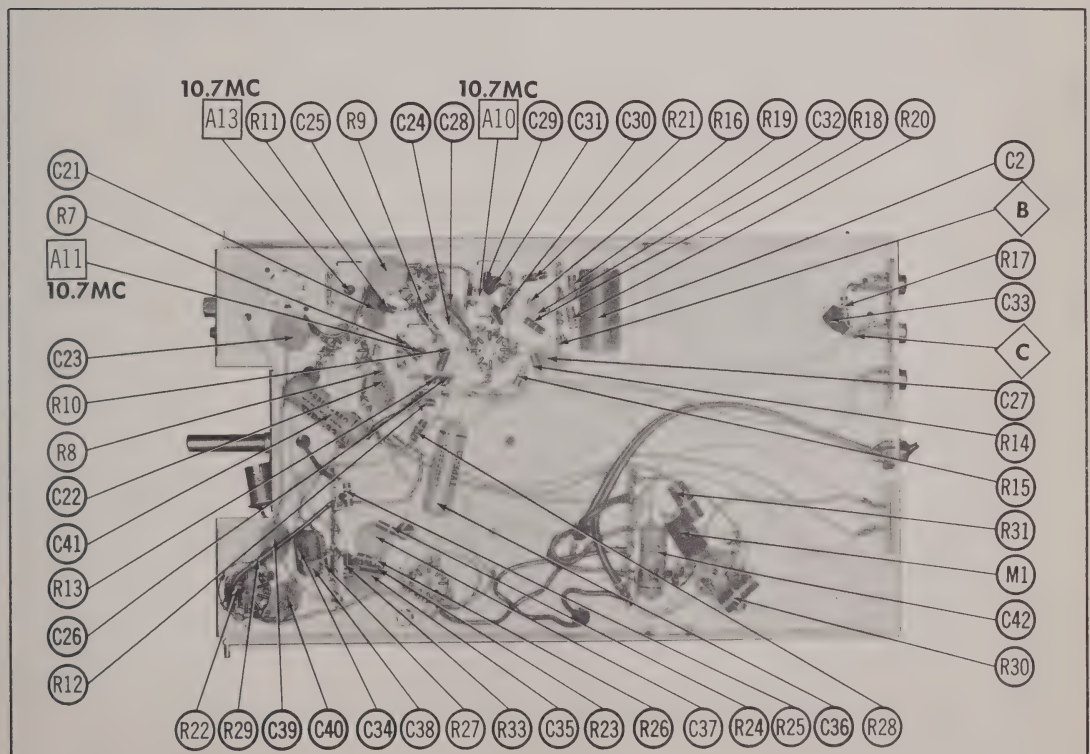
ITEM No.	ORIG. TYPE	REPLACEMENT DATA Stromberg-Carlson PART No.	GENERAL ELECTRIC PART No.	RAYTHEON PART No.	SYLVANIA PART No.	NOTES
M2						AFC Diode (Part of M3)

MISCELLANEOUS

ITEM No.	PART NAME	Stromberg-Carlson PART No.	NOTES
M3	Tuner	164000-015	FM, Complete
M4	Switch		AFC, (SPDT Slide Type)
M5	Switch		Local-Distant (SPDT Slide Type)
M6	Switch		AC Off-On (SPST Slide Type)



AM TUNER-BOTTOM VIEW



FM TUNER-BOTTOM VIEW

AM TUNER PARTS LIST AND DESCRIPTIONS

WIRING DATA

General-use Unshielded Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in Ten Colors 8524 (Stranded) Available in Ten Colors
Power Cord	Use BELDEN No. 1765-B (6 Ft. Length) 1725-K (7½ Ft. Length)

TUBES

• GENERAL ELECTRIC • RAYTHEON • SYLVANIA •

ITEM No.	USE	TYPE	ITEM No.	USE	TYPE
V7	AM RF Amplifier	6BA6	V9	AM IF Amplifier	6BA6
V8	AM Converter	6BE6	V10	AM Det.-AVC-AF Amp.	6AT6

ELECTROLYTIC CAPACITORS

ITEM No.	RATING CAP.	RATING VOLT.	REPLACEMENT DATA Stromberg-Carlson PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	NOTES
C43A	▪40	200	111000-075		B0240	FP221	TMD-2250	TVL-2520	
B	▲40	200			BR4025	TC48	TD-40-250	TVA-1511	
C	40	150							

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	REMARKS	REPLACEMENT DATA AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C44	100		DI-100	DD-101	L10T1	CCD-101	GP310	10TS-T10
C45	220		DI-220	DD-221	L10T22	CCD-221	GP322	10TS-T22
C46	1000		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C47	1.5 10%		NPO-SI 1.5	TCZ-1R5	C10V15C		CNO-515	10TCC-V15
C48	1000		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C49	100		DI-100	DD-101	L10T10	CCD-101	GP310	10TS-T10
C50	10 N750		N750-SI 10	TCN-10	C10Q1U	CCTN-100	CN7-410	10TCU-Q10
C51	1000		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C52	.1 200V		P288N-1	DF-104	CUB2P1	2DP-3-104	GEM-201	2TM-P10
C53	4700		BPD-0047	DD-472	BYA10D47M	CCD-472	B-247	5HK-D47
C54	1000		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C55	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C56	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C57	.01 600V		P688N-01	D6-103	CUB6S1	6DP-2-103	GEM-611	6TM-S10

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REPLACEMENT DATA IRC PART No.	WORKMAN TV PART No.	REMARKS	ITEM No.	RATING	REPLACEMENT DATA IRC PART No.	WORKMAN TV PART No.	REMARKS
R34	2.2meg				R43	220K			
R35	10K				R44	220K			
R36	1000Ω				R45	100K			
R37	220Ω				R46	2.2meg			
R38	22K				R47	2.2meg			
R39	22K				R48	27K			
R40	1000Ω				R49	10K			
R41	68Ω				R50	1000Ω 2W			
R42	100K								

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA Stromberg-Carlson PART No.	Merit PART No.	Miller PART No.	Stancor PART No.	NOTES
L4	Loopstick	139000-002	BC-419	705-A		
L5	AM Ant. Coil	114165-000	BC-549	6302	RTC-8535	2.5MH
L6	AM RF Trans.	114164-000				
L7	AM Osc. Coil	114000-104	BC-393	70-OSC	RTC-8647	
L8	1st AM IF Trans.	114364-000	BC-352	12-C1	RTC-8632	
L9	2nd AM IF Trans.	114453-000	BC-355	12-C6	RTC-8634	

TRANSFORMER (POWER)

ITEM No.	RATING PRI.	RATING SEC. 1	REPLACEMENT DATA Stromberg-Carlson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No	NOTES
T2	117V@ .28A	120V@.040A Tap@6.3V@1.2A	161000-223	P-3045①	PA-8421①	26R38①		①Drill New Mounting Hole.

POWER RECTIFIERS

ITEM No.	RATING CURRENT (Measured)	REPLACEMENT DATA Stromberg-Carlson PART No.	RCA PART No.	SARKES TARZIAN PART No.	SYLVANIA PART No.	NOTES
M7	.040A	162000-052 *	1N1763 *	40H *	SR500 *	* Silicon Type

MISCELLANEOUS

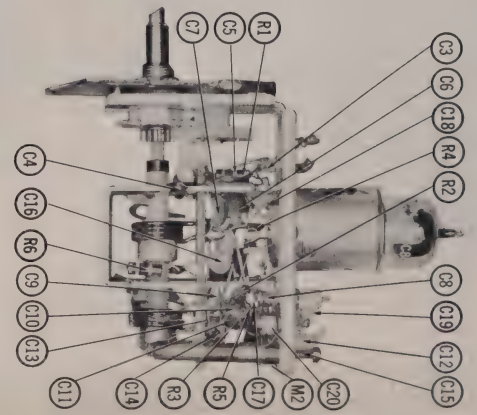
ITEM No.	PART NAME	Stromberg-Carlson PART No.	NOTES
M8	Tuning Cap.		AM (Ant. 21–410mmf, RF 10–307mmf, Osc. 8–112mmf)
M9	Switch	158000-032	Black, Local-Distant (SPDT Slide Type)
	Switch	158000-040	White, Local-Distant (SPDT Slide Type)
M10	Switch	158000-033	Black, AC (SPST Slide Type) Model AM-442
	Switch	158000-041	White, AC (SPST Slide Type) Model AM-442
	Switch	158000-059	Black, AC (SPST Slide Type) Model AM-441
	Switch	158000-042	White, AC (SPST Slide Type) Model AM-441

CABINETS & CABINET PARTS

(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

NAME	PART NO.	DESCRIPTION
Dial	122000-031	Tuning, AM441, AM442
Dial	122000-032	Tuning, FM443
Knob	134000-070	Gold, AM441, AM442
Knob	134000-072	Chrome, AM441, AM442

FM RF SUBCHASSIS



PHOTOFACT® Folder

SYLVANIA MODELS 4324, 45C15B, F, M, 45C16B, M, W, 4706B, E, M (Ch. 1-634-2, 1-644-1)

SYLVANIA MODELS 4324, 45C15B, F, M, 45C16B, M, W, 4706B, E, M (Ch. 1-634-2, 1-644-1)

MODEL 4706B

SYLVANIA MODELS 4324, 45C15B, F, M, 45C16B, M, W, 4706B, E, M (Ch. 1-634-2, 1-644-1)

TRADE NAME	Sylvania Models 4324, 45C15B, 45C15F, 45C15M, 45C16B, 45C16M, 45C16W, 4706B, 4706E, 4706M 4706W (Tuner Ch. 1-644-1, Amp. Ch. 1-634-2)
MANUFACTURER	Sylvania Home Electronics, Div. of Sylvania Electric Products, Inc., 700 Ellicott Street, Batavia, N. Y.
TYPE SET	AC Operated 8 Tube FM-AM Tuner, 8 Tube Stereo Amplifier, And 4 Speed Automatic Record Changer (Models 4324 and 45C Series Do Not Include Tuner)
TUNING RANGES	BROADCAST 540 —1650KC FREQ. MOD. 88—108MC
POWER SUPPLY	110 - 120 Volts AC, 60 Cycles RATING 20 Watts, 1 Amp. @ 117 Volts (Amp., Less Motor) 30 Watts, .25 Amp. @ 117 Volts AC (Tuner)

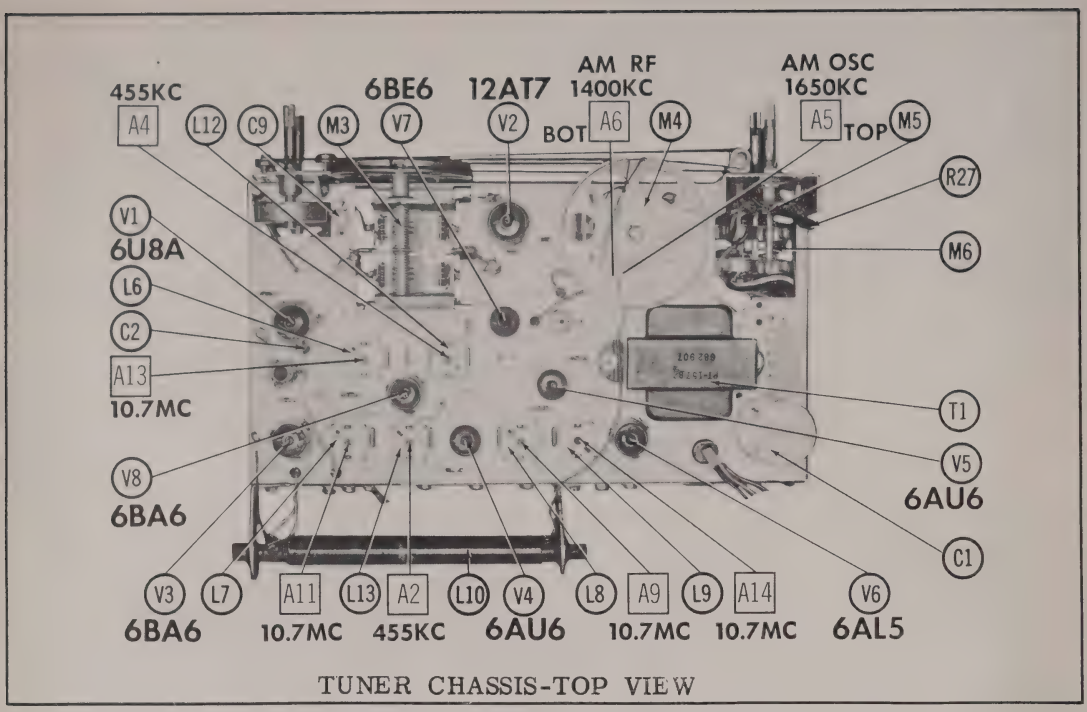
FOR SERVICE INFORMATION ON RECORD CHANGER — SEE SIMILAR V-M 1201 — PHOTOFACT SET 436 FOLDER 18 OR RECORD CHANGER MANUAL RC-12

SET 531 FOLDER 12

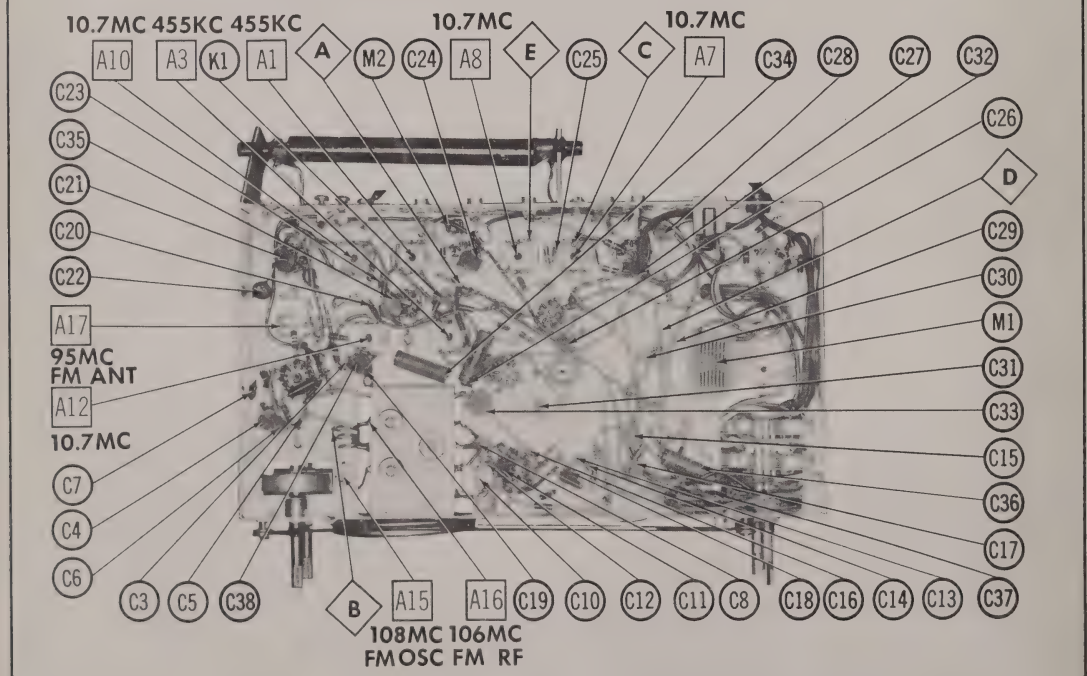
HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed. Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. © 1961 Howard W. Sams & Co., Inc., Indianapolis 6, Indiana. Printed in U.S. of America

KN274



TUNER CHASSIS-TOP VIEW



TUNER CHASSIS BOTTOM VIEW-ALIGNMENT, CAPACITOR & MISC. IDENT.

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Use only enough generator output to provide a usable indication.

Suggested Alignment Tools:
- A1 thru A4..... GENERAL CEMENT #5009, 8195, 8274, 8275, 8728, 8729, 8987, 8988, 8989; WALSCO #2515, 2531, 2532
- A5, A6..... GENERAL CEMENT #5004, 5008, 5009; WALSCO #2520
- A7 thru A11 and A14. GENERAL CEMENT #8282, 8606, 8606-L, 9295, 9440; WALSCO #2526, 2543, 2544, 2545
- A12, A13..... GENERAL CEMENT #9296, 9297; WALSCO #2546, 2547
- A15, A16..... GENERAL CEMENT #5000, 5003, 8276, 8290; WALSCO #2512, 2515, 2522, 2523, 2525, 2537

AM ALIGNMENT — SELECTOR IN AM POSITION

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
1.	High side thru .01mfd to pin 7 (grid) of AM Converter. Low side to chassis.	455KC (400∿ Mod.)	(AM) Tuning gang fully open.	DC probe to point (A). Common to chassis.	A1, A2, A3, A4	Adjust for maximum deflection.
2.	Loop	1650KC	1650KC	"	A5	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
3.	"	1400KC	1400KC	"	A6	"

FM IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM—SELECTOR IN FM POSITION

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
4	High side thru .001mfd to point (B). Low side to chassis.	10.7MC (Unmod.)	(FM) Point of non-interference.	DC probe thru 1meg to point (C). Common to chassis.	A7, A8, A9, A10, A11, A12, A13	Adjust for maximum deflection.
5.	"	"	"	DC probe to point (D). Common to chassis.	A14	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

FM IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE—SELECTOR IN FM POSITION

Use frequency modulated signal with 60∿ modulation and 450KC sweep. Use 120∿ sawtooth voltage in scope for horizontal deflection.

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	CONNECT SCOPE	ADJUST	REMARKS
4.	High side thru .001mfd to point (B). Low side to chassis.	10.7MC (450KC Swp)	(FM) Point of non-interference.	Vert. amp. thru 47K to point (C). Low side to chassis.	A7, A8, A9, A10, A11, A12, A13	Adjust for maximum gain and symmetry of response similar to Fig. 1 with markers as shown.
5.	"	"	"	Vert. amp. to point (D). Low side to chassis.	A14	Adjust to place marker at the center of crossover lines similar to Fig. 2. SLIGHTLY retouch A7 for maximum amplitude and straightness of crossover lines.

FM RF ALIGNMENT—SELECTOR IN FM POSITION

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
6.	Across FM antenna terminals with 270Ω in high side.	108MC (Unmod.)	(FM) 108MC	DC probe to point (E). Common to chassis.	A15	Adjust for maximum deflection.
7.	"	106MC	106MC	"	A16	Adjust for maximum deflection while rocking tuning gang.
8.	"	95MC	95MC	"	A17	Adjust for maximum deflection.

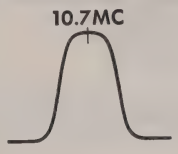


FIG. 1

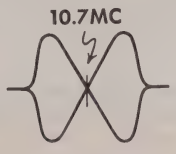
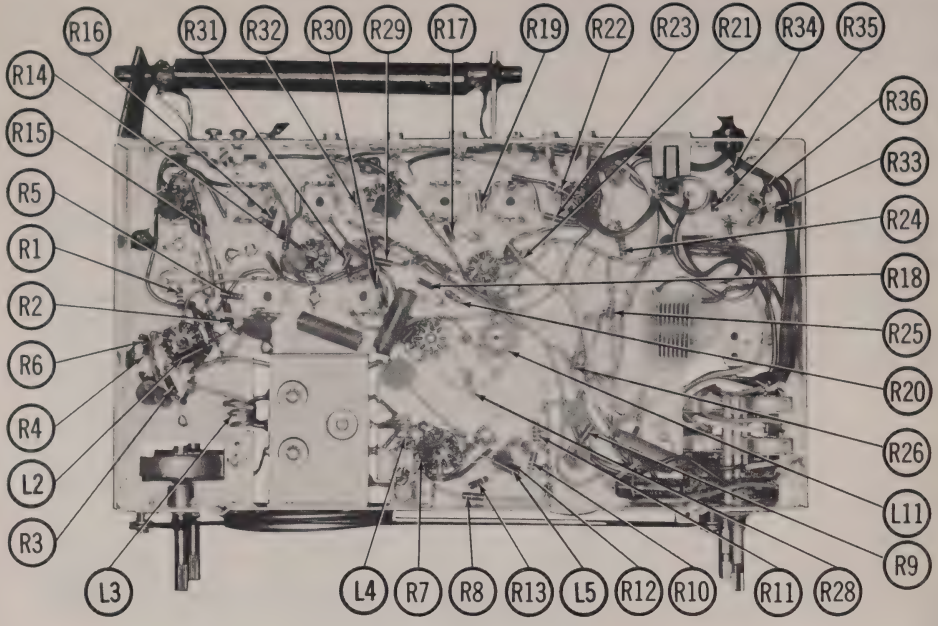
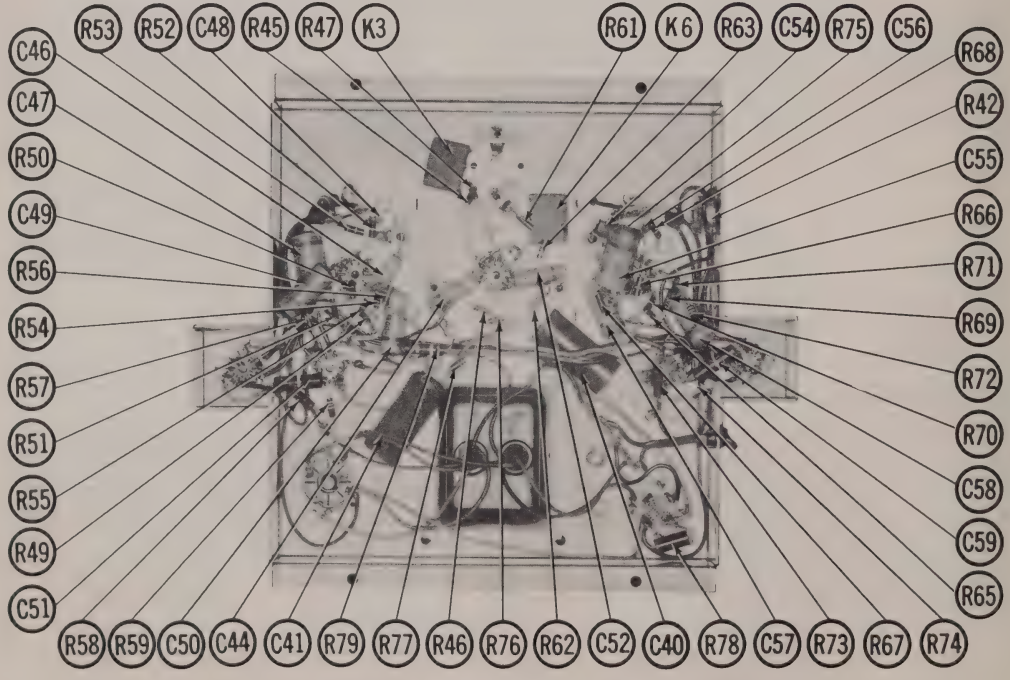


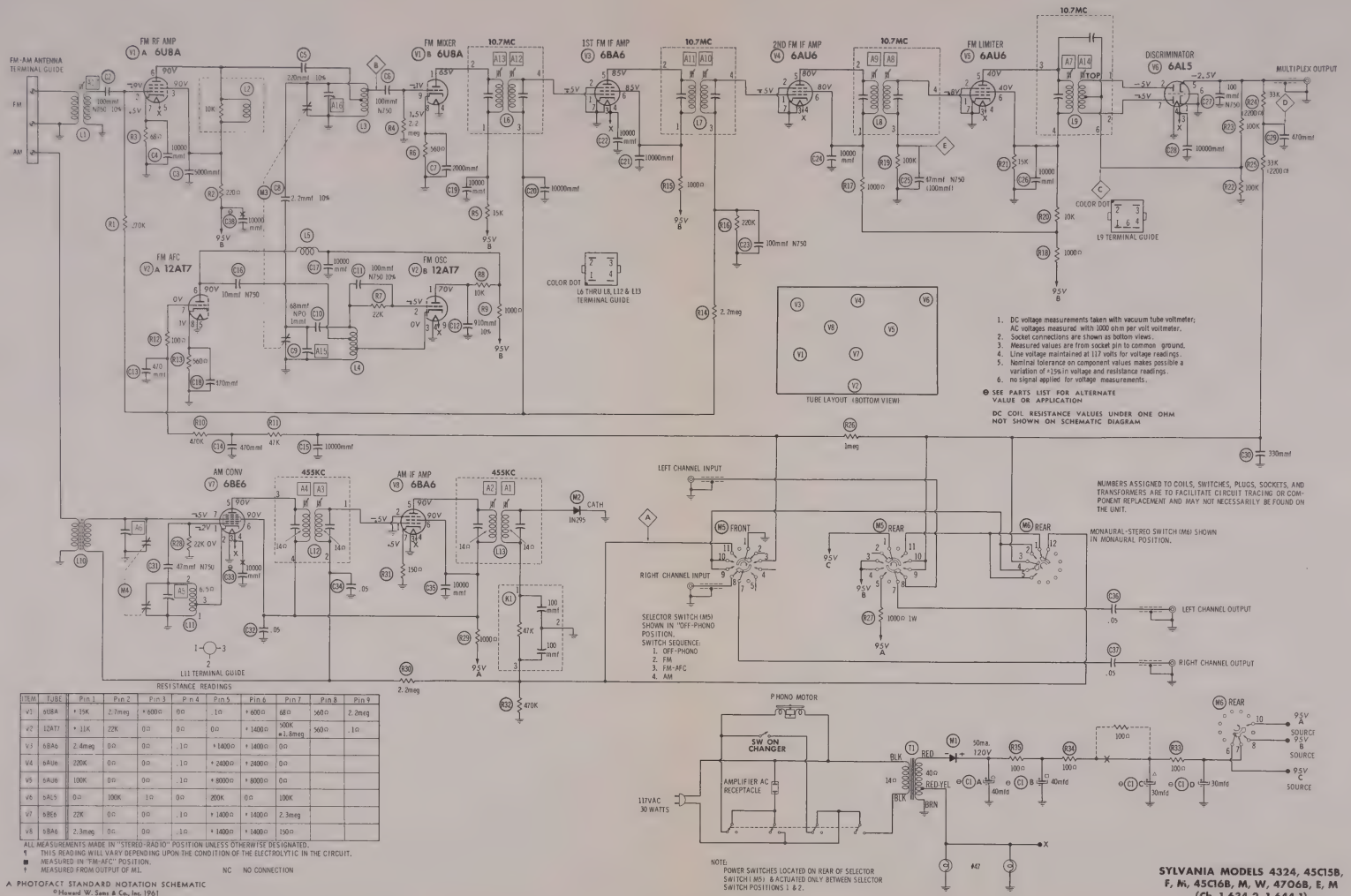
FIG. 2



TUNER CHASSIS BOTTOM VIEW-RESISTOR & INDUCTOR IDENT.



AMP CHASSIS-BOTTOM VIEW



1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured with 1000 ohm per volt voltmeter.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common ground.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
6. no signal applied for voltage measurements.

⊖ SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

NUMBERS ASSIGNED TO COILS, SWITCHES, PLUGS, SOCKETS, AND TRANSFORMERS ARE TO FACILITATE CIRCUIT TRACING OR COMPONENT REPLACEMENT AND MAY NOT NECESSARILY BE FOUND ON THE UNIT.

RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	6U8A	† 15K	2.7meg	† 600Ω	0Ω	.1Ω	† 600Ω	68Ω	560Ω	2.2meg
V2	12AT7	† 11K	22K	0Ω	0Ω	0Ω	† 1400Ω	500K ■1.8meg	560Ω	.1Ω
V3	6BA6	2.4meg	0Ω	0Ω	.1Ω	† 1400Ω	† 1400Ω	0Ω		
V4	6AU6	220K	0Ω	0Ω	.1Ω	† 2400Ω	† 2400Ω	0Ω		
V5	6AU6	100K	0Ω	0Ω	.1Ω	† 8000Ω	† 8000Ω	0Ω		
V6	6AL5	0Ω	100K	.1Ω	0Ω	200K	0Ω	100K		
V7	6BE6	22K	0Ω	0Ω	.1Ω	† 1400Ω	† 1400Ω	2.3meg		
V8	6BA6	2.3meg	0Ω	0Ω	.1Ω	† 1400Ω	† 1400Ω	150Ω		

ALL MEASUREMENTS MADE IN "STEREO-RADIO" POSITION UNLESS OTHERWISE DESIGNATED.
¶ THIS READING WILL VARY DEPENDING UPON THE CONDITION OF THE ELECTROLYTIC IN THE CIRCUIT.
■ MEASURED IN "FM-AFC" POSITION.
† MEASURED FROM OUTPUT OF M1.
NC NO CONNECTION

A PHOTOFACT STANDARD NOTATION SCHEMATIC
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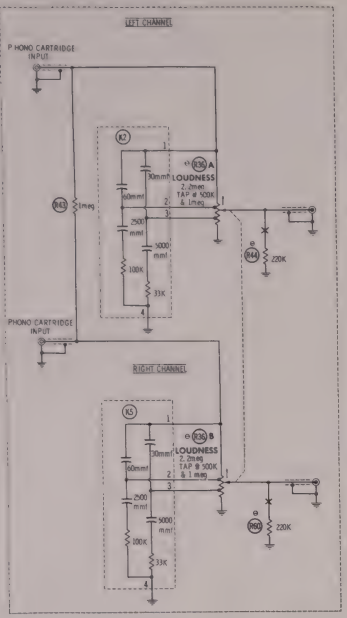
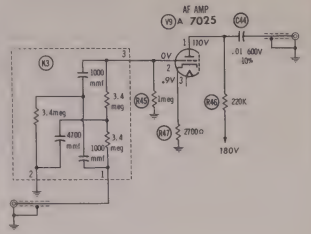
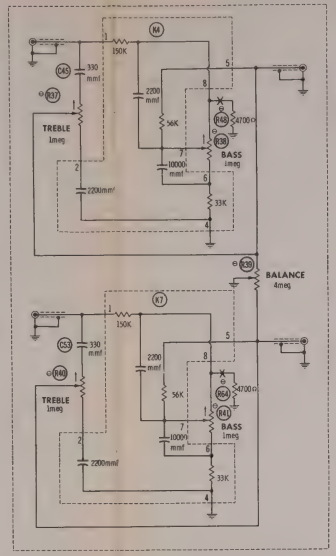
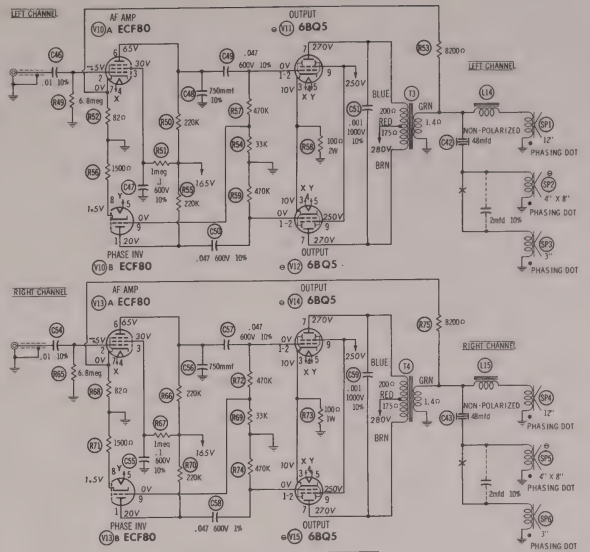
SYLVANIA MODELS 4324, 45C15B, F, M, 45C16B, M, W, 4706B, E, M (Ch. 1-634-2, 1-644-1)


LEFT CHANNEL
PHONO CARTRIDGE INPUT
LOUDNESS 2.2meg TAP @ 500K & 1meg
RIGHT CHANNEL
PHONO CARTRIDGE INPUT
LOUDNESS 2.2meg TAP @ 500K & 1 meg





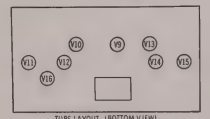


1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured with 1000 ohm per volt voltmeter.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common ground.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance of component values makes possible a variation of ±15% in voltage and resistance readings.
6. All controls at minimum, proper output load connected.

Θ SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION (CONTROL VIEWED FROM SHAFT END)

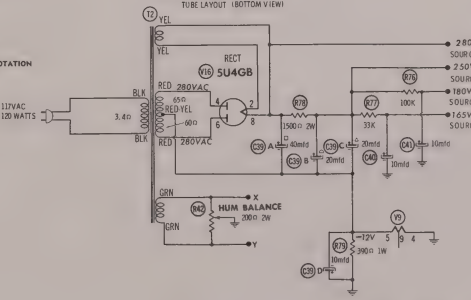


TUBE LAYOUT (BOTTOM VIEW)

RESISTANCE READINGS (Cont.)

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V9	7025	†320K	1meg	2700Ω	0Ω	15Ω	†320K	1meg	2700Ω	NC
V10	ECF80	†255K	6.8meg	†1meg	50Ω	50Ω	†255K	82Ω	1500Ω	33K
V11	6BQ5	NC	500K	100Ω	50Ω	50Ω	NC	†200Ω	NC	†1500Ω
V12	6BQ5	NC	470K	100Ω	50Ω	50Ω	NC	†175Ω	NC	†1500Ω
V13	ECF80	†255K	6.8meg	†1meg	50Ω	50Ω	†255K	82Ω	1500Ω	33K
V14	6BQ5	NC	500K	100Ω	50Ω	50Ω	NC	†200Ω	NC	†1500Ω
V15	6BQ5	NC	470K	100Ω	50Ω	50Ω	NC	†175Ω	NC	†1500Ω
V16	5U4GB	NC	¶	NC	65Ω	NC	60Ω	NC	¶	

ALL MEASUREMENTS MADE IN "STEREO-RADIO" POSITION.
¶ THIS READING WILL VARY DEPENDING UPON THE CONDITION OF THE ELECTROLYTIC IN THE CIRCUIT.
† MEASURED FROM PIN 8 OF V16. NC NO CONNECTION



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SYLVANIA MODELS 4324, 45C15B, F, M, 45C16B, M, W, 4706B, E, M (Ch. 1-634-2, 1-644-1)

TUNER PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	TYPE	ITEM No.	USE	TYPE
V1	RM RF Amp. -FM Mixer	6U8A	V5	FM Limiter	6AU6
V2	FM Osc. -FM AFC	12AT7	V6	Discriminator	6AL5
V3	1st FM IF Amplifier	6BA6	V7	AM Converter	6BE6
V4	2nd FM IF Amplifier	6AU6	V8	AM IF Amplifier	6BA6

ELECTROLYTIC CAPACITORS

ITEM No.	RATING CAP.	RATING VOLT.	REPLACEMENT DATA SYLVANIA PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	NOTES
C1A	▲40	200	161-4029	AFH4-01-60		FP318.74	TMT-3337	TVL-3485	①
B	▲40	200				TC77	TD-30-350	TVA-1511	①
C	▲30	200							①
D	30	200							①

① In some versions, C1D is a single unit, 40mfd@150V (Part #161-1053), C1C is 20mfd(C1A, B, C Part#161-3040).

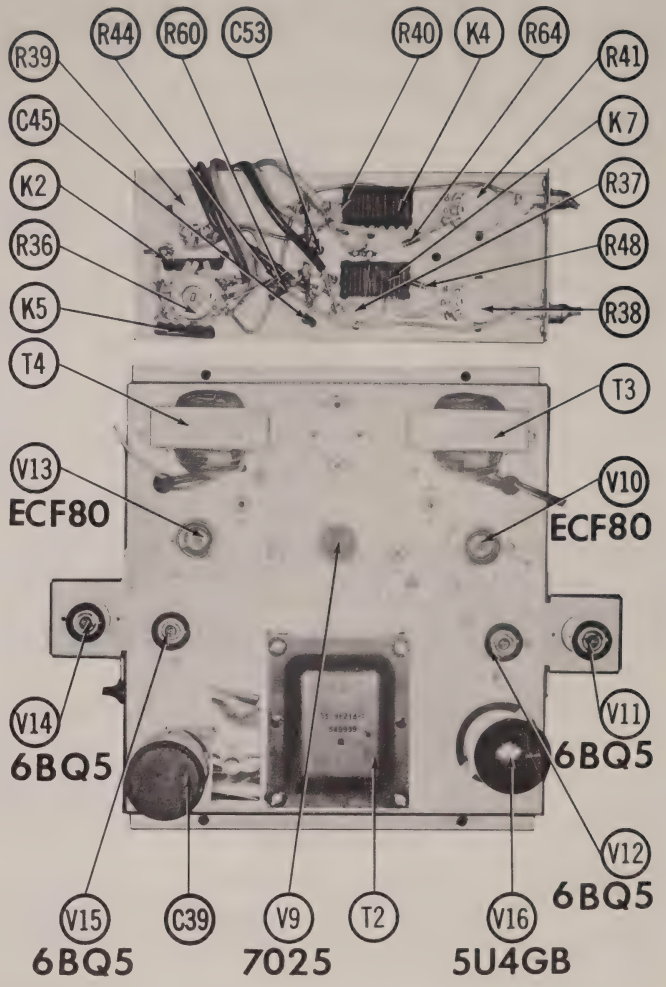
FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	REMARKS	REPLACEMENT DATA AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C2	100 N750 10%		N750-SI 100	TCN-100	C10T1U	CCTN-101	CN7-310	10TCU-T10
C3	5000		BPD-005	DD-502	BYA10D5	CCD-502	B-250	5HK-D50
C4	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C5	220 10%		DI-220	DD-221	L10T22	CCD-221	GP322	10TS-T22
C6	100 N750		N750-DI 100	TCN-100	C10T1U	CCTN-101	CN7-310	10TCU-T10
C7	2000		BPD-002	DD-202	BYA10D2	CCD-202	B-220	5HK-D20
C8	2.2 10%		NPO-SI 2.2	TCZ-2R2	C10V22C	CCTO-2R2	CNO-522	10TCC-V22
C9		#172-0043						
C10	68 NPO 1mmf							
C11	100 N750 10%		N750-DI 100	DTN-100	C10T1U	CCTN-101	CN7-310	10TCU-T10
C12	910 10%		DI-1000	DD-911	5R5D1	CCD-102	GP210	10TS-D10
C13	470		BPD-00047	DD-471	BYA10T47	CCD-471	B-347	10TS-T47
C14	470		BPD-00047	DD-471	BYA10T47	CCD-471	B-347	10TS-T47
C15	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C16	10 N750		N750-DI 10	DTN-10	C10Q1C	CCTN-100	CN7-410	10TCU-Q10
C17	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C18	470		BPD-00047	DD-471	BYA10T47	CCD-471	B-347	10TS-T47
C19	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C20	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C21	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C22	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C23	100 N750		N750-DI 100	DTN-100	C10T1U	CCTN-101	CN7-310	10TCU-T10
C24	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C25	47 N750	(100) †	N750-DI 47	DTN-47	C10Q47U	CCTN-470	CN7-447	10TCU-Q47
C26	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C27	100 N750		N750-DI 100	DTN-100	C10T1U	CCTN-101	CN7-310	10TCU-T10
C28	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C29	470		BPD-00047	DD-471	BYA10T47	CCD-471	B-347	10TS-T47
C30	330		BPD-00033	DD-331	L10T33	CCD-331	B-333	10TS-T33
C31	47 N750		N750-DI 47	DTN-47	C10Q47U	CCTN-470	CN7-447	10TCU-Q47
C32	.05 200V		P288N-05	DD-503	CUB2S5	4DP-3-503	GEM-415	2TM-S50
C33	10000	Note 1	BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C34	.05 200V		P288N-05	DD-503	CUB2S5	4DP-3-503	GEM-415	2TM-S50
C35	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C36	.05 200V		P288N-05	DD-503	CUB2S5	4DP-3-503	GEM-415	2TM-S50
C37	.05 200V		P288N-05	DD-503	CUB2S5	4DP-3-503	GEM-415	2TM-S50
C38	10000	Note 1	BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10

Sylvania Part Number.
† Alternate Value.
Note 1. Not used in some versions.

AMP CHASSIS—TOP VIEW



SYLVANIA MODELS 432A, 45C15B, F, M, 45C16B, M, W, 470GB, E, M (Ch. 1-634-2, 1-644-1)

FOLDER 12

TUNER PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REMARKS
R1	270K	
R2	220Ω	
R3	68Ω	
R4	2.2meg	
R5	15K	
R6	560Ω	
R7	22K	
R8	10K	
R9	1000Ω	
R10	470K	
R11	47K	
R12	100Ω	
R13	560Ω	
R14	2.2meg	
R15	1000Ω	
R16	220K	
R17	1000Ω	
R18	1000Ω	
R19	100K	
R20	10K	
R21	15K	
R22	100K	
R23	100K	
R24	33K	(2200Ω) *
R25	33K	(2200Ω) *
R26	1meg	
R27	1000Ω 1W	
R28	22K	
R29	1000Ω	
R30	2.2meg	
R31	150Ω	
R32	470K	
R33	100Ω	
R34	100Ω	
R35	100Ω	

* Alternate Value.

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	SYLVANIA PART No.	REPLACEMENT DATA
K1	AM Diode Filter	100mmf, 100mmf, 47K	190-0044	Aerovox PA-97 Centralab PC-50 Cornell-Dubilier 111TM1 Sprague D-1

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA				NOTES
		SYLVANIA PART No.	Merit PART No.	Miller PART No.	Stancor PART No.	
L1	FM Ant. Trans.	111-0029				① Wound on 10K Resistor.
L2	RF Choke (4.7uh)	145-0035①	SW-631 ▲	9330-16 ▲	RTC-8519 ▲	▲ Parallel With 10K Resistor.
L3	FM RF Coil	112-0018				
L4	FM Osc. Coil	113-0048				
L5	RF Choke (3uh)	145-0033	SW-630	9310-24	RTC-9155	
L6	1st FM IF Trans.	121-0034	FM-254	1463	RTC-8599	
L7	2nd FM IF Trans.	121-0034	FM-254	1463	RTC-8599	
L8	3rd FM IF Trans.	121-0034	FM-254	1463	RTC-8599	
L9	Discriminator	128-0016	FM-253	1464	RTC-8665	
L10	Loopstick	581-0020	BC-418	705-A		
L11	AM Osc. Coil	113-0053	BC-400	71-OSC	RTC-8648	
L12	1st AM IF Trans.	121-0033	BC-352	12-C1	RTC-8632	
L13	2nd AM IF Trans.	121-0033	BC-353	12-C2	RTC-8633	

TRANSFORMER (POWER)

ITEM No.	RATING		REPLACEMENT DATA					NOTES
	PRI.	SEC. 1	SYLVANIA PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T1	117V@ .25A	110V@ .050A Tap@6.3V@ 2.8A	141-0082					

POWER RECTIFIERS

ITEM No.	RATING	REPLACEMENT DATA				NOTES
	CURRENT (Measured)	SYLVANIA PART No.	RCA PART No.	SARKES TARZIAN PART No.	SYLVANIA PART No.	
M1	.050A	517-0023 *	1N1763 ♦	100A *	SR200 ♦	* Selenium Type ♦ Silicon Type

SIGNAL DIODES

ITEM No.	ORIG. TYPE	REPLACEMENT DATA				NOTES
		SYLVANIA PART No.	GENERAL ELECTRIC PART No.	RAYTHEON PART No.	SYLVANIA PART No.	
M2	1N295			1N295	1N295	AM Detector (Pigtail)

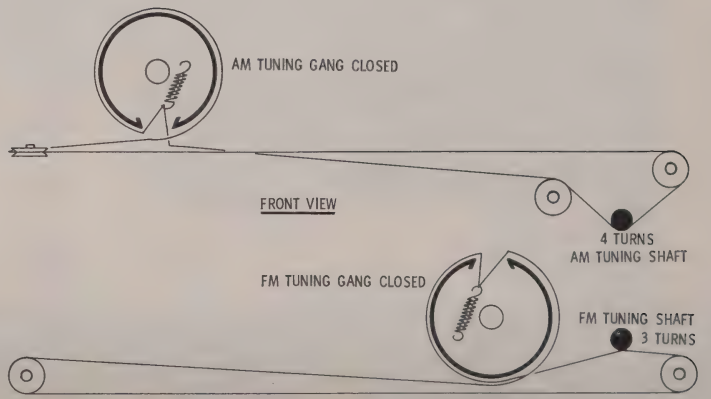
MISCELLANEOUS

ITEM No.	PART NAME	SYLVANIA PART No.	NOTES
M3	Tuning Cap.	170-0035	FM
M4	Tuning Cap.	170-0034	AM, 2 Gang (Ant. 12-465mmf, Osc. 19-161mmf)
M5	Switch	573-0021	Selector (Rotary Wafer Type) Includes 4 Rotary Snap Switches (Part #571-0033 Each)
M6	Switch	573-0020	Monaural-Stereo (Rotary Wafer Type)

WIRING DATA

General-use Unshielded Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in Ten Colors 8524 (Stranded) Available in Ten Colors
Power Cord	Use BELDEN No. 1765-B (6 Ft. Length) 1725-K (7½ Ft. Length)
Low-Loss Shielded Lead (Interconnecting)	Use BELDEN No. 8401
Phono Pick-up Arm Cable	Use BELDEN No. 8430 (Two Conductor - Twisted)

DIAL CORD STRINGING



AMP PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	TYPE (GENERAL ELECTRIC / RAYTHEON / SYLVANIA)
V9	Left Channel AF Amp. - Right Channel AF Amp.	7025
V10	Left Channel AF Amp. - Phase Inverter	ECF80
V11	Left Channel Output	6BQ5 (EL84) *
V12	Left Channel Output	6BQ5 (EL84) *
V13	Right Channel AF Amp. - Phase Inverter	ECF80
V14	Right Channel Output	6BQ5 (EL84) *
V15	Right Channel Output	6BQ5 (EL84) *
V16	Rectifier	5U4GB

* Alternate.

ELECTROLYTIC CAPACITORS

ITEM No.	RATING CAP.	RATING VOLT.	SYLVANIA PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	NOTES
C39A	■40	450	161-4027	AFH4-92-50	D0662	FP444.95	TMQ-4646	TVL-4771.6	
B	▲20	450							
C	▲20	450							
D	10	50							
C40	10	450	161-1052	PRS1720	BR1045	TC72	TD-10-450	TVA-1705	
C41	10	450	161-1052	PRS1720	BR1045	TC72	TD-10-450	TVA-1705	
C42	48	50NP	161-1047	PRS7450	BR5015	TC3501 †		TVANS-1308.1*	
C43	48	50NP	161-1047	PRS7450	BR5015	TC3501 †		TVANS-1308.1*	

† Use 2 units. Connect negative terminals together. Connect positive terminals into circuit the same as the original non-polarized unit.
* Not normally in distributor's stock. Available thru distributor on order to manufacturer.

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	REMARKS	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C44	.01 600V 10%		V84C6S1-10%		PM6S1	6DP-2-103	GEM-1611	6TM-S10
C45	330		SI 330	D6-331	L10T33	CCD-331	B-333	10TS-T33
C46	.01 400V		V84C4S1-10%		PM4S1	4DP-1-103	GEM-1611	4TM-S10
C47	.1 600V 10%		V84C6P1-10%		PM6P1	6DP-2-103	GEM-1001	6TM-P10
C48	750 10%		DI-750	DD-751	5R5T75	CCD-751	GP375	10TS-T75
C49	.047 600V 10%		V84C6S47-10%		PM6S47	6DP-3-473	GEM-1615	6TM-S47
C50	.047 600V 10%		V84C6S47-10%		PM6S47	6DP-3-473	GEM-1615	6TM-S47
C51	.001 1000V 10%				DPMS16D1	16DP-2-102	GEM-1621	10TM-D10
C52	.01 600V 10%		V84C6S1-10%		PM6S1	6DP-2-103	GEM-1611	6TM-S10
C53	330		SI 330	D6-331	L10T33	CCD-331	B-333	10TS-T33
C54	.01 400V 10%		V84C4S1-10%		PM4S1	4DP-1-103	GEM-1611	4TM-S10
C55	.1 600V 10%		V84C6P1-10%		PM6P1	6DP-4-104	GEM-1001	6TM-P10
C56	750		DI-750	DD-751	5R5T75	CCD-751	GP375	10TS-T75
C57	.047 600V 10%		V84C6S47-10%		PM6S47	6DP-3-473	GEM-1615	6TM-S47
C58	.047 600V 10%		V84C6S47-10%		PM6S47	6DP-3-473	GEM-1615	6TM-S47
C59	.001 1000V 10%				DPMS16D1	16DP-2-102	GEM-1621	10TM-D10

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	SYLVANIA PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	INSTALLATION NOTES
R36A	2.2meg*	½	153-0187	BT-175				Loudness, Right Channel Note 1
B	2.2meg*	½		STR-175				Loudness, Left Channel Note 1
R37A	1meg	½	153-0184	B-70	A47-1meg-Z	Q13-137	U53	Treble, Left Channel Note 2
B	Shaft			Not Req.	KSS-3	Not Req.	Not Req.	
R38A	1meg	½	153-0184	B-70	A47-1meg-Z	Q13-137	U53	Bass, Left Channel Note 2
B	Shaft			Not Req.	KSS-3	Not Req.	Not Req.	

CONTROLS (cont)

ITEM No.	RATING RESISTANCE	RATING WATTS	SYLVANIA PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	INSTALLATION NOTES
R39A	4meg	½	153-0188	B-86	A47-4meg-S	Q11-141	U67	Balance, Note 3
B	Shaft			Not Req.	KSS-3	Not Req.	Not Req.	
R40A	1meg	½	153-0184	B-70	A47-1meg-Z	Q13-137	U53	Treble, Right Channel Note 2
B	Shaft			Not Req.	KSS-3	Not Req.	Not Req.	
R41A	1meg	½	153-0184	B-70	A47-1meg-Z	Q13-137	U53	Bass, Right Channel Note 2
B	Shaft			Not Req.	KSS-3	Not Req.	Not Req.	
R42	200Ω	2(WW)	159-0010				FL200P	Hum Balance

Note 1. Model 4324 uses Part #153-0186. Model 45C15, -16, use Part #153-0207.
Note 2. Model 45C16 uses Part #153-0206. Model 45C15 uses dual control, Part #153-0208(R38 and R41, R37 and R40)

Note 3. Model 4706 only.
* Taps @ 500K and 1meg.

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REMARKS
R43	1meg	
R44	220K	Note 1
R45	1meg	
R46	220K	
R47	2700Ω	
R48	4700Ω	Note 1
R49	6.8meg	
R50	220K	
R51	1meg	
R52	82Ω	
R53	8200Ω	
R54	33K	
R55	220K	

ITEM No.	RATING	REMARKS
R56	1500Ω	
R57	470K	
R58	100Ω 2W	
R59	470K	
R60	220K	Note 1
R61	1meg	
R62	220K	
R63	2700Ω	
R64	4700Ω	Note 1
R65	6.8meg	
R66	220K	
R67	1meg	
R68	82Ω	

ITEM No.	RATING	REMARKS
R69	33K	
R70	220K	
R71	1500Ω	
R72	470K	
R73	100Ω 1W	
R74	470K	
R75	8200Ω	
R76	100K	
R77	33K	
R78	1500Ω 2W	
R79	390Ω 1W	

Note 1. Not used in some versions.

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	SYLVANIA PART No.	REPLACEMENT DATA
K2	Loudness Comp.	30mmf, 60mmf, 2500mmf, 5000mmf, 33K, 100K	190-0045	
K3	Rumble Filter	1000mmf, 1000mmf, 4700mmf, 3.4meg, 3.4meg, 3.4meg	190-0046	
K4	Tone Comp.	2200mmf, 2200mmf, 10000mmf, 33K, 56K, 150K	190-0053	Note 1
K5	Loudness Comp.	30mmf, 60mmf, 2500mmf, 5000mmf, 33K, 100K	190-0045	
K6	Rumble Filter	1000mmf, 1000mmf, 4700mmf, 3.4meg, 3.4meg, 3.4meg	190-0046	
K7	Tone Comp.	2200mmf, 2200mmf, 10000mmf, 33K, 56K, 150K	190-0053	Note 2

Note 1. C45 may be part of K4 in some versions.
Note 2. C53 may be part of K7 in some versions.

CROSS OVER CHOKE

ITEM No.	RATINGS CURRENT (Measured)	RATINGS DC RES.	RATINGS INDUCTANCE (0 CURRENT 1000 ~)	REPLACEMENT DATA SYLVANIA PART No	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No	NOTES
L14		.35Ω	.0044 HY	145-0031					
L15		.35Ω	.0044 HY	145-0031					

SYLVANIA MODELS 4324, 45C15B, F, M, 45C16B, M, W, 4706B, E, M (Ch. 1-634-2, 1-644-1)

AMP PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (POWER)

ITEM No.	RATING			REPLACEMENT DATA					NOTES
	PRI.	SEC. 1	SEC. 2	SYLVANIA PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T2	117V@ 1A	560VCT @ .170A	5V@ 3A	141-0078	P-3084	P-8172	26R44		
	SEC. 3	SEC. 4	SEC. 5						
	6.3V@ 4A								

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
	PRI.	SEC.	SYLVANIA PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T3	5800Ω CT	6-8Ω	143-0076	A-2901①	A-3823①	22S88	S-56Z	① Drill New Mounting Holes.
T4	5800Ω CT	6-8Ω	143-0076	A-2901①	A-3823①	22S88	S-56Z	

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP.	SYLVANIA PART No.	QUAM PART No.	
SP1	12"	PM	6-8Ω	539-12Ii	12A6AZ7	* Used in Models 4706, 4324 Only
SP2	4"x 8"	PM	3-4Ω	539-4803 *	4BA2	♦ Used in Models 45C Series Only.
SP3	3"	PM	6-8Ω	539-0301	3A15TZ6.8	† Used in Models 45C15 Series Only
SP4	12"	PM	6-8Ω	539-12Ii	12A6AZ7	
SP5	4"x 8"	PM	3-4Ω	539-4803 *	4BA2	
SP6	3"	PM	6-8Ω	539-0301	3A15TZ6.8	
	6"	PM	3-4Ω	539-06Ii ♦	6A2I	
	8"	PM	3-4Ω	539-0813 †	8A31	

PHONO CARTRIDGE & NEEDLES

*NEEDLE LISTINGS SHOWN ARE FOR RESPECTIVE REPLACEMENT CARTRIDGES ONLY.

ITEM No.	REPLACEMENT DATA								NOTES
	SYLVANIA PART No.		ASTATIC PART No.		ELECTRO-VOICE PART No.		SONOTONE PART No.		
	CARTRIDGE	NEEDLE*	CARTRIDGE	NEEDLE*	CARTRIDGE	NEEDLE*	CARTRIDGE	NEEDLE*	
M7			13T	Not Req.	13	Not Req.	10T2-S	Not Req.	

CABINETS & CABINET PARTS

(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

NAME	PART NO.	DESCRIPTION
Dial Glass	721-0028	Dial
Dial Pointer	792-0027	FM
Dial Pointer	792-0026	AM
Knob	740-0259	Tuning, Loudness, Bass, Treble, Balance (Satin Finish) Model 4324, 4706
Knob	740-0313	Tuning, Loudness, Bass, Treble, Balance (Brass Finish) Model 4324, 4706
Knob	740-0308	Bass, Treble, Model 45C Series
Knob	740-0285	Monaural/ Stereo (Satin Finish) Model4706
Knob	740-0314	Monaural/ Stereo (Brass Finish) Model 4706
Knob	740-0262	Loudness, Balance (Inner) Model 4324
Knob	740-0305	Loudness, Balance (Inner) Model 45C Series
Knob	740-0309	Loudness, Balance (Outer) Model 45C Series
Knob	740-0261	Loudness, Balance (Outer) Model 4324

WIRING DATA

General-use Unshielded Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in Ten Colors 8524 (Stranded) Available in Ten Colors
Power Cord	Use BELDEN No. 1765-B (6 Ft. Length) 1725-K (7½ Ft. Length)
Low-Loss Shielded Lead (Interconnecting)	Use BELDEN No. 8401
Phono Pick-up Arm Cable	Use BELDEN No. 8430 (Two Conductor - Twisted)

PHOTOFACT® Folder

SYMPHONIC
MODELS 1526, 1532, 1626

SYMPHONIC
MODELS 1526, 1532, 1626

MODEL 1626

SYMPHONIC
MODELS 1526, 1532, 1626

TRADE NAME	Symphonic Models 1526, 1532, 1626
MANUFACTURER	Symphonic Radio & Electronics Corp., 235 Jersey Ave., New Brunswick, New Jersey
TYPE SET	AC Operated 3 Tube Stereo Phono Amplifier With 4 Speed Automatic Record Changer
POWER SUPPLY	110 – 120 Volts AC, 60 Cycles RATING 56 Watts, .54 Amp. @117 Volts AC (Less Motor)

FOR SERVICE INFORMATION ON RECORD CHANGER – SEE SIMILAR WEBCOR 170 – PHOTOFACT SET 447 FOLDER 13 OR RECORD CHANGER MANUAL RC-12

SET 531 FOLDER 13

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed. Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. © 1961 Howard W. Sams & Co., Inc., Indianapolis 6, Indiana. Printed in U.S. of America

KT190

PARTS LIST AND DESCRIPTIONS

TUBES

• GENERAL ELECTRIC •			• RAYTHEON • SYLVANIA •		
ITEM No.	USE	TYPE	ITEM No.	USE	TYPE
V1	Channel 1 AF Amp. - Channel 2 AF Amp.	12AX7	V2 V3	Channel 1 Output Channel 2 Output	50L6GT 50L6GT

ELECTROLYTIC CAPACITORS

ITEM No.	RATING CAP.	RATING VOLT.	REPLACEMENT DATA SYMPHONIC PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	NOTES
C1	40	300	CE-128	PRS1670	BR4035	TC78	TD-40-350	TVA-1611	
C2A	40	300	CE-127	PR4-185	BBRT0185	WQ775	TDLD-30	TVA-2740	
B	30	300					TD-30-350	TVA-1608	
C	20	300							
C3	50	25	CE-129	PRS1265	BBR50-25	TC29	TD-50-25	TVA-1206	
C4	50	25	CE-129	PRS1265	BBR50-25	TC29	TD-50-25	TVA-1206	

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	REMARKS	REPLACEMENT DATA AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C5	.047 400V		P488N-047	DD-503	CUB4S47	4DP-3-473	GEM-4147	4TM-S47
C6	.047 400V		P488N-047	DD-503	CUB4S47	4DP-3-473	GEM-4147	4TM-S47
C7	470		DI-470	DD-471	LI0T47	CCD-471	B-347	10TS-T47
C8	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C9	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C10	470		DI-470	DD-471	LI0T47	CCD-471	B-347	10TS-T47
C11	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C12	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C13	.047 400V		P488N-047	DD-503	CUB4S47	4DP-3-473	GEM-4147	4TM-S47

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA SYMPHONIC PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	3meg		VC-269	B-85			FC36A	Loudness, Channel 2, Note 1
B	3meg			SR-85			RU36A	Loudness, Channel 1, Note 1
C	Shaft			Not Req.			CS3500	
R2A	500K		VC-270	B-60	AD47-500K-Z		FA55A	Treble, Channel 2, Note 2
B	500K			SR-60	Not Req.		RU55A	Treble, Channel 1, Note 2
C	Shaft			Not Req.	KSS-3		CS3500	
R3A	3meg		VC-269	B-85			FC36A	Bass, Channel 2, Note 1
B	3meg			SR-85			RU36A	Bass, Channel 1, Note 1
C	Shaft			Not Req.			CS3500	
R4A	2500Ω		VC-271	B-7	A47-2500-S	Bll-111	RU252L	Balance, Note 3
B	Shaft			Not Req.	KSS-3	SK1	SL3500	
C	Bushing			Not Req.	Not Req.	Not Req.	SL-38	

Note 1: Models 1526, 1532 use, and some versions of Model 1626 may use Part #VC-277.
Note 2: Models 1526, 1532 use, and some versions of Model 1626 may use Part #VC-278.
Note 3: Models 1526, 1532 use, and some versions of Model 1626 may use Part #VC-279.

RESISTORS (IRC or EQUIVALENT)

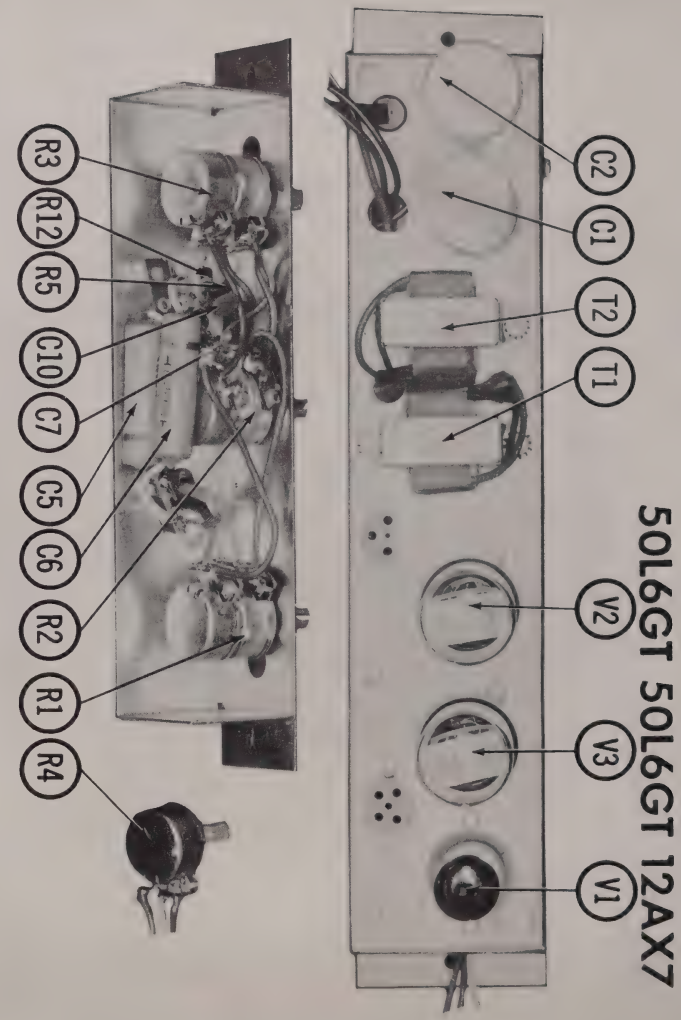
All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REMARKS
R5	100K	
R6	6.8meg	
R7	270K	
R8	470Ω	
R9	10K	
R10	470K	

ITEM No.	RATING	REMARKS
R11	82Ω 2W	
R12	100K	
R13	6.8meg	
R14	470Ω	
R15	270K	
R16	10K	

ITEM No.	RATING	REMARKS
R17	470K	
R18	22K 1W	
R19	100Ω 5W	IRC#PW5-100Ω
R20	50Ω 10W	IRC#PW10-50Ω
R21	47Ω 2W	

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE PRI.	IMPEDANCE SEC.	REPLACEMENT DATA SYMPHONIC PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
T1	9700Ω	6-8Ω	TR-164					
		SEC. 2						
		15Ω						
		SEC. 1						
T2	9700Ω	6-8Ω	TR-164					
		SEC. 2						
		15Ω						

SPEAKER

ITEM No.	TYPE SIZE	FIELD	V. C. IMP.	REPLACEMENT DATA SYMPHONIC PART No.	QUAM PART No.	NOTES
SP1	6"	PM	3-4Ω	SP-609 *	6A21	* Used in Models 1626, 1526
SP2	6"	PM	3-4Ω	SP-609 *	6A21	
	6"	PM	3-4Ω	SP-600 ♦	6A31	♦ Used in Models 1532

POWER RECTIFIERS

ITEM No.	RATING CURRENT (Measured)	REPLACEMENT DATA SYMPHONIC PART No.	RCA PART No.	SARKES TARZIAN PART No.	SYLVANIA PART No.	NOTES
M1	.110A	SR105 *	1N1763 *	2F4 *	SR200 *	* Silicon Type
M2	.110A	SR105 *	1N1763 *	2F4 *	SR200 *	

PHONO CARTRIDGE & NEEDLES

*NEEDLE LISTINGS SHOWN ARE FOR RESPECTIVE REPLACEMENT CARTRIDGES ONLY.

ITEM No.	REPLACEMENT DATA SYMPHONIC PART No. CARTRIDGE	SYMPHONIC PART No. NEEDLE*	ASTATIC PART No. CARTRIDGE	ASTATIC PART No. NEEDLE*	ELECTRO-VOICE PART No. CARTRIDGE	ELECTRO-VOICE PART No. NEEDLE*	SONOTONE PART No. CARTRIDGE	SONOTONE PART No. NEEDLE*	NOTES
M3			13TB	Not Req.	26S	S1-1 * & S3-3 *	8TA4-S	N-8TA-S *	

CABINETS & CABINET PARTS

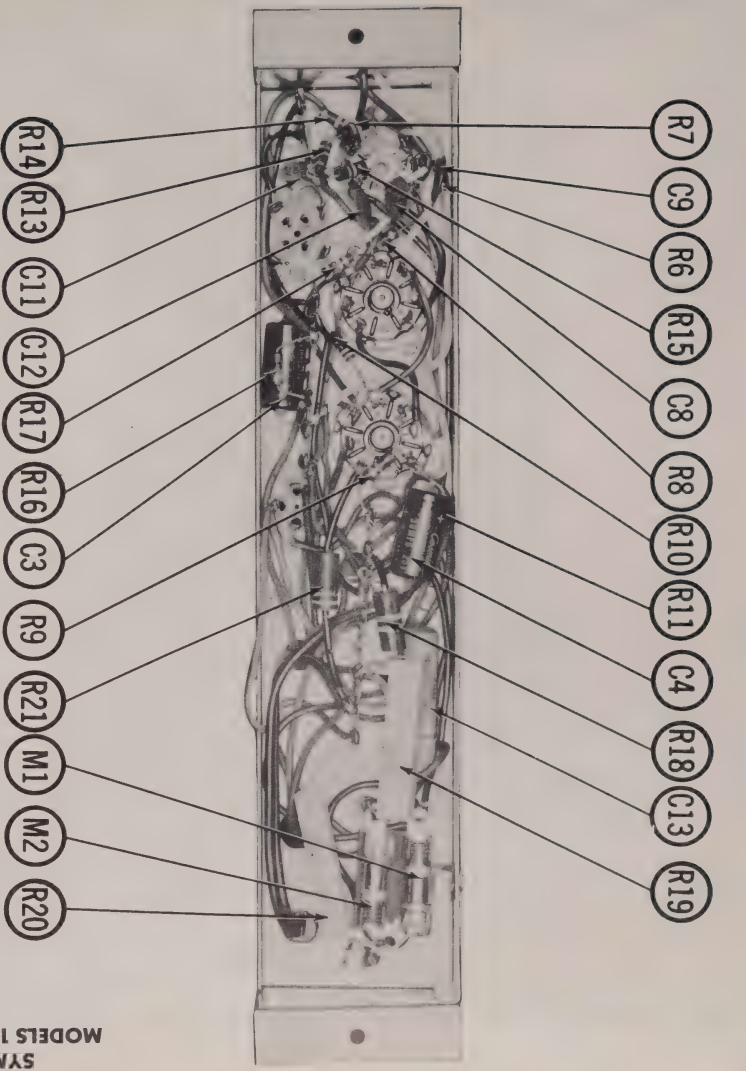
(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

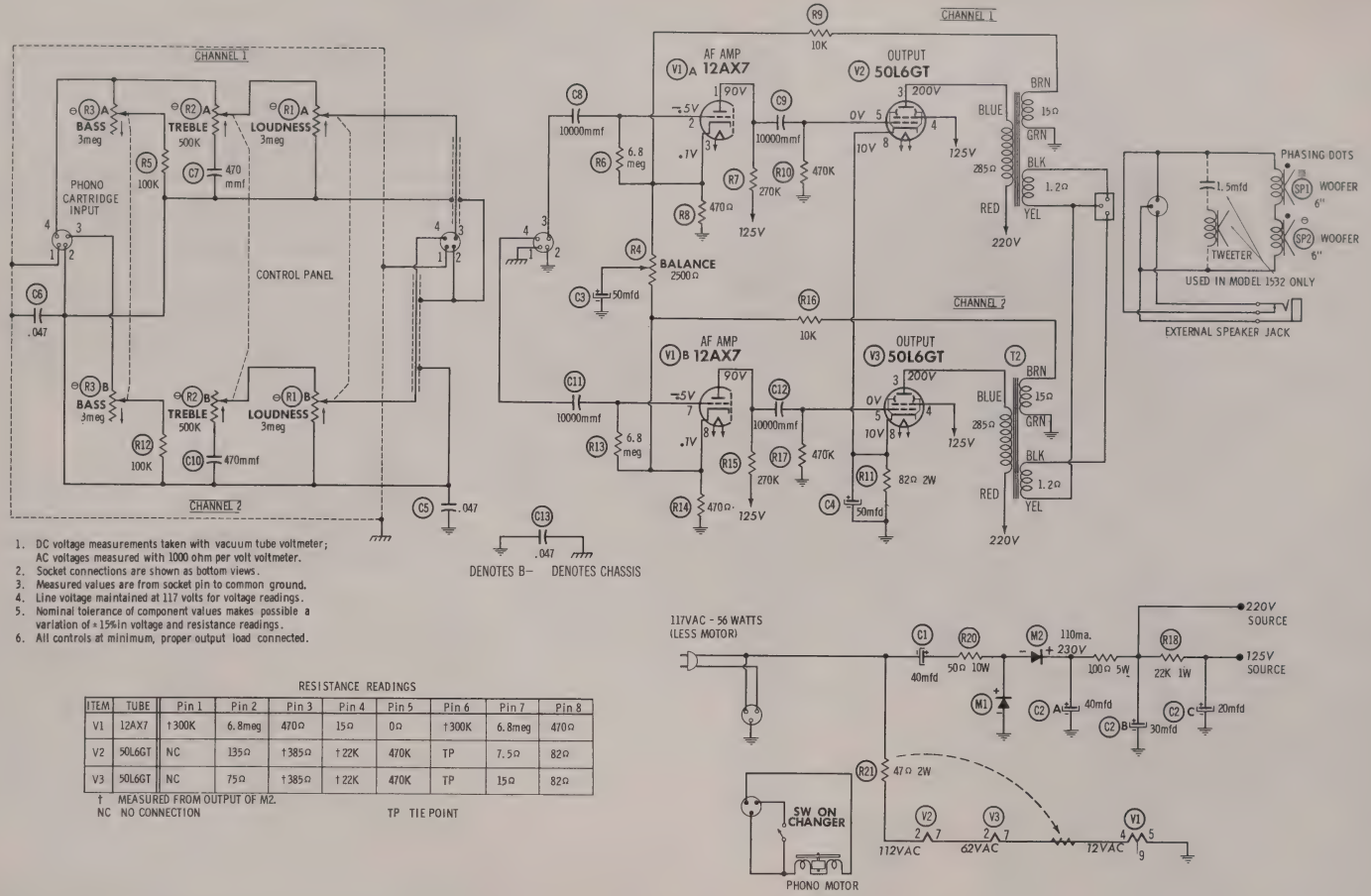
NAME	PART NO.	DESCRIPTION
Knob	KN294	Black, Model 1532
Knob	KN305	Black (Balance) Model 1532
Knob	KN320	Black With Brass Insert, Model 1626
Knob	KN334	Black With Gold Insert, Models 1626, 1526
Knob	KN342	Black With Brass Insert, Model 1526

WIRING DATA

General-use Unshielded Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in Ten Colors 8524 (Stranded) Available in Ten Colors
Power Cord	Use BELDEN No. 1765-B (6 Ft. Length) 1725-K (7½ Ft. Length)
Low-Loss Shielded Lead (Interconnecting)	Use BELDEN No. 8401
Phono Pick-up Arm Cable	Use BELDEN No. 8430 (Two Conductor - Twisted)

CHASSIS—BOTTOM VIEW





1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured with 1000 ohm per volt voltmeter.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common ground.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance of component values makes possible a variation of ±15% in voltage and resistance readings.
6. All controls at minimum, proper output load connected.

RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V1	12AX7	†300K	6.8meg	470Ω	15Ω	0Ω	†300K	6.8meg	470Ω
V2	50L6GT	NC	135Ω	†385Ω	†22K	470K	TP	7.5Ω	82Ω
V3	50L6GT	NC	75Ω	†385Ω	†22K	470K	TP	15Ω	82Ω

† MEASURED FROM OUTPUT OF M2.
NC NO CONNECTION
TP TIE POINT

A PHOTOFACT STANDARD NOTATION SCHEMATIC
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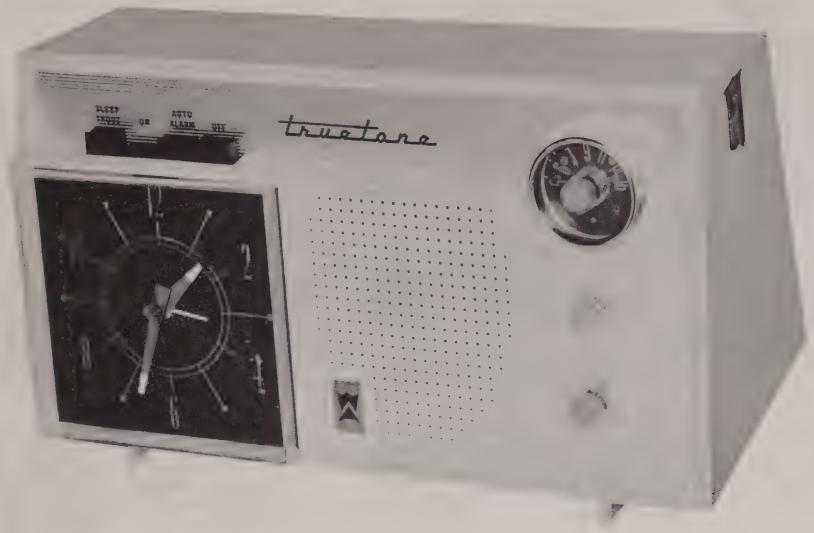
SYMPHONIC
MODELS 1526, 1532, 1626

PHOTOFACT® Folder

TRUETONE
MODEL DC2086A

TRUETONE
MODEL DC2086A



TRUETONE
MODEL DC2086A

TRADE NAME	Truetone Model DC2086A
SUPPLIER	Western Auto Supply Co., 2107 Grand Ave., Kansas City 8, Missouri
TYPE SET	AC Operated 5 Tube AM Receiver With Electric Clock
POWER SUPPLY	110 — 120 Volts AC, 60 Cycles RATING 27 Watts, .26 Amp. @117 Volts AC
TUNING RANGE—BROADCAST	540 — 1650KC

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading.

Suggested Alignment Tools: A1 thru A4....GENERAL CEMENT #5097, 8727
WALSCO #2515
A5, A6.....GENERAL CEMENT #5004, 5008, 5009
WALSCO #2520

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	High side thru .1mfd to antenna stator lug of tuning gang. Low side to chassis.	455KC (400∿ Mod.)	Tuning gang fully open.	Across voice coil.	A1, A2, A3, A4	Adjust for maximum output.
2.	"	1650KC	"	"	A5	"
3.	Loop	1500KC	1500KC Signal.	"	A6	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.

SET 531 FOLDER 14

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed. Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. © 1961 Howard W. Sams & Co., Inc., Indianapolis 6, Indiana. Printed in U.S. of America

KG451

DATE 5—61 SET 531 FOLDER 14

FOLDER 14

PARTS LIST AND DESCRIPTIONS

TUBES

• GENERAL ELECTRIC • RAYTHEON • SYLVANIA •					
ITEM No.	USE	TYPE	ITEM No.	USE	TYPE
V1	Converter	12BE6	V4	Output	50C5
V2	IF Amplifier	12BA6	V5	Rectifier	35W4
V3	Det.-AVC-AF Amp.	12AV6			

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						
	CAP.	VOLT.	TRUETONE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	NOTES
C1A	70	150	150-145	PRS2230	BBRD8415	WD220	TDLD-11	TVA-2460	
B	30	150							

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C2	220		BPD-00022	DD-221	L10T22	CCD-221	B-322	10TS-T22
C3	.05 200V		P288N-05	DD-503	CUB4S5	4DP-3-503	GEM-415	2TM-S50
C4	220		BPD-00022	DD-221	L10T22	CCD-221	B-322	10TS-T22
C5	.02 400V		P488N-02	DD-203	CUB4S2	4DP-2-203	GEM-412	4TM-S20
C6	.005 600V		P488N-005	D6-502	CUB6D5	6DP-1-502	GEM-625	6TM-D50
C7	.02 400V		P488N-02	DD-203	CUB4S2	4DP-2-203	GEM-412	4TM-S20
C8	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C9	.05 400V		P488N-05	DD-503	CUB4S5	4DP-3-503	GEM-415	4TM-S50
C10	.1 400V		P488N-1	DF-104	CUB4P1	4DP-3-104	GEM-401	4TM-P10

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	TRUETONE PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	
R1	4meg *		120-141					Volume
R2A	500K		120-168	B-60	A47-500K-Z	Q13-133	U48	Tone
B	Shaft			Not Req.	FS-3	Not Req.	Not Req.	

* Tap @ 2.5meg.

RESISTORS

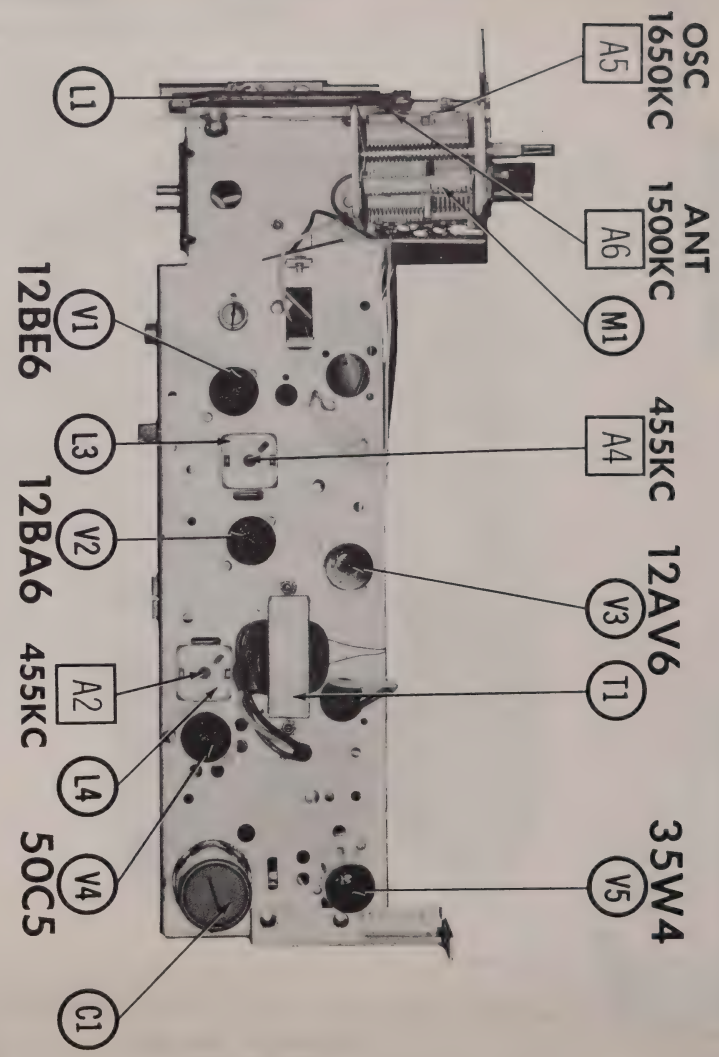
All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REPLACEMENT DATA			ITEM No.	RATING	REPLACEMENT DATA		
		IRC PART No.	WORKMAN TV PART No.	REMARKS			IRC PART No.	WORKMAN TV PART No.	REMARKS
R3	2.2meg				R9	220K			
R4	22K				R10	470K			
R5	2.2meg				R11	150Ω			
R6	150Ω				R12	1800Ω 1W			
R7	330K				R13	100Ω			
R8	6.8meg								

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA					NOTES
		TRUETONE PART No.	Merit PART No.	Miller PART No.	Stancor PART No.	Workman TV PART No.	
L1	Loopstick	132-147B	BC-419	2004		T528	
L2	Osc.	130-141A	BC-393	69-OSC	RTC-8646	T506	
L3	Input IF	130-114	BC-352	12-C1	RTC-8632	T607	
L4	Output IF	130-114	BC-353	12-C2	RTC-8633	T608	

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
	PRI.	SEC.	TRUETONE PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T1	3400Ω Tap @ 9%	3-4Ω	138-132	A-3031	A-3336	24S89	S-16X	

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP.	TRUETONE PART No.	QUAM PART No.	
SP1	4"x 6"	PM	3-4Ω	175-144	46A07	

MISCELLANEOUS

ITEM No.	PART NAME	TRUETONE PART No.	NOTES
M1	Tuning Cap.	160-131	2 Gang (Ant. 14—356mmf, Osc. 15—115mmf)
M2	Switch	125-111	Radio-Phono (SPDT Slide Type)
M3	Clock Ass'y.		

CABINETS & CABINET PARTS

(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

NAME	PART NO.	DESCRIPTION
Crystal	205-156	Clock
Dial	215-195C	
Dial Pointer	140-139A	
Knob	220-196B	Tuning
Knob	220-192A	Volume, Tone
Pushbutton	220-193A	
Cabinet	210-174	Shell, Rose-Beige
Cabinet	205-155D	Front Panel

WIRING DATA

General-use Unshielded Hook-up Wire ..... Use BELDEN No. 8530 (Solid) Available in Ten Colors
8524 (Stranded) Available in Ten Colors

Power Cord ..... Use BELDEN No. 1765-B (6 Ft. Length)
1725-K (7½ Ft. Length)

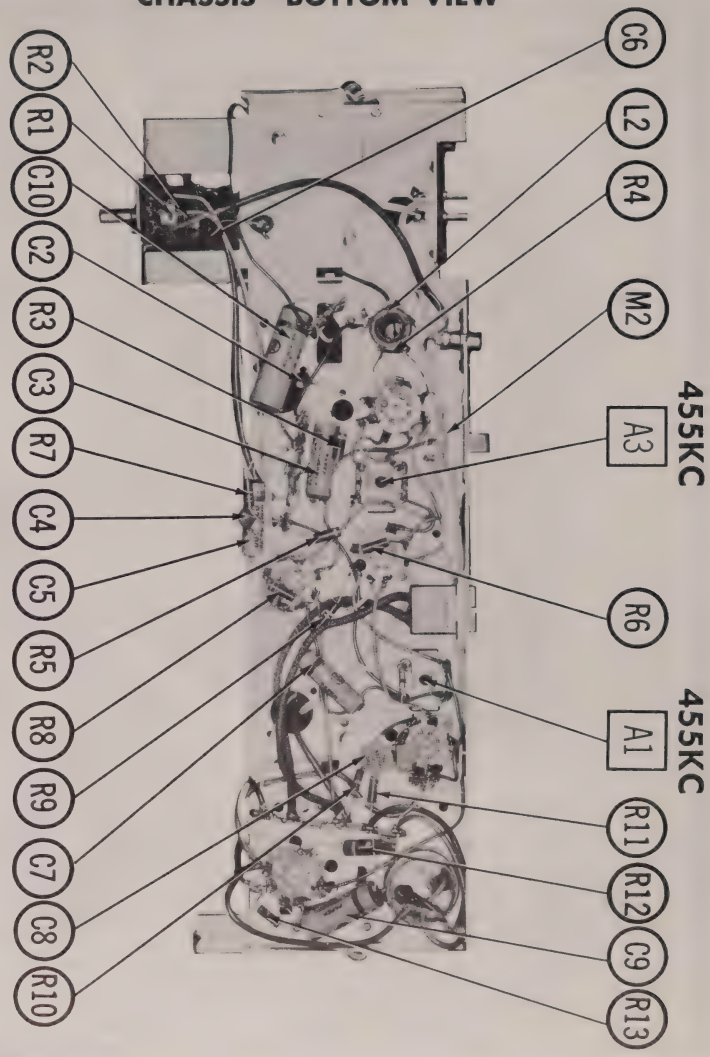
OPERATION

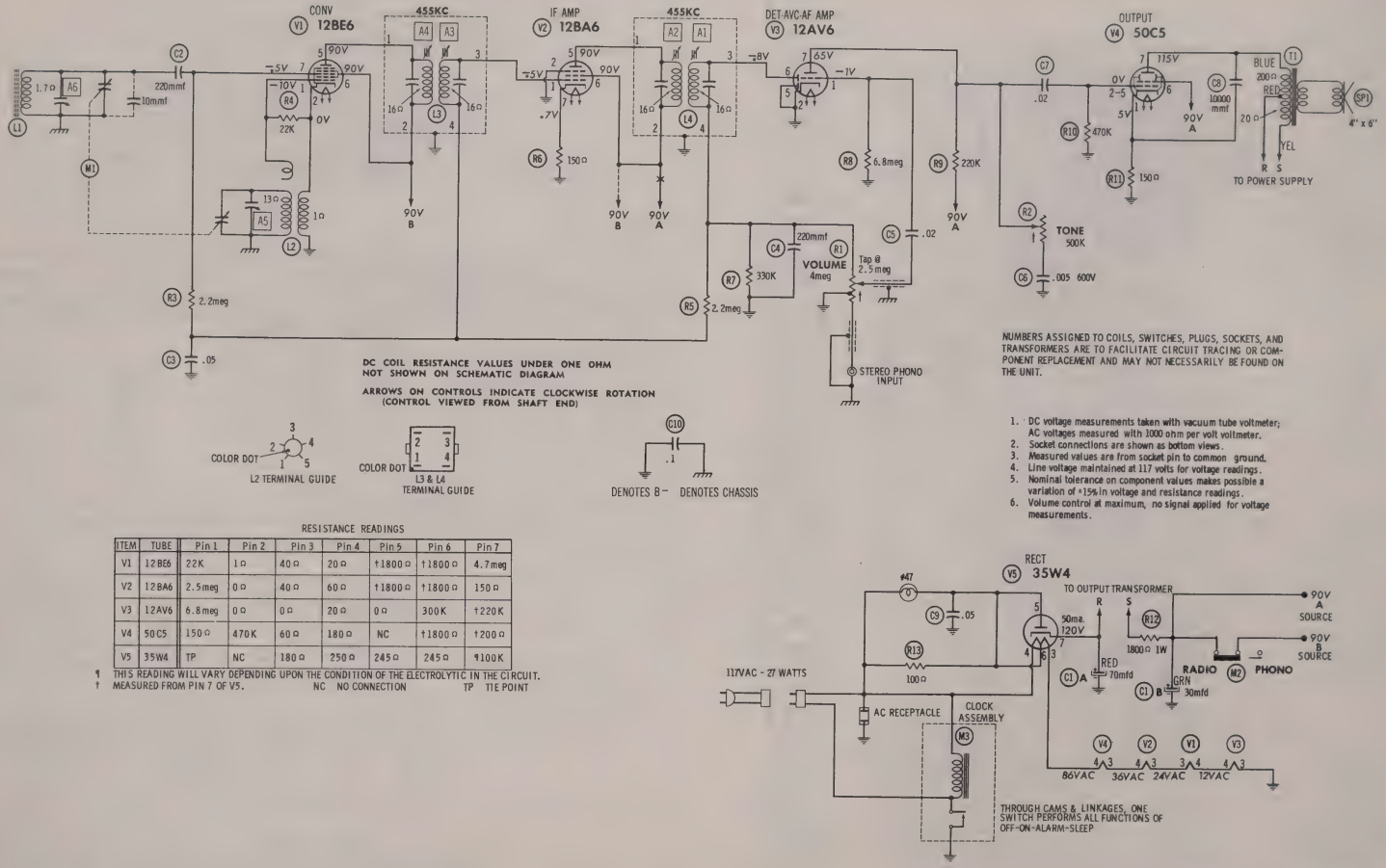
1. To operate radio for 10 minutes, press "Sleep-Snooz" button once. For 30 minutes of operation, press button 2 times; for 45 minutes of operation, press button 3 times; and for 1 hour of operation, press button 4 times. Pressing the button 5 times turns off the receiver.

2. To turn off the alarm for 10 minutes, press "Sleep-Snooze" button one time. To turn off alarm for 30 minutes, press button 2 times; for 45 minutes, press button 3 times and for 1 hour, press button 4 times. Pressing the button 5 times turns off the receiver.

3. If the receiver has been turned on automatically, the "Sleep-Snooz" button must be pressed 5 times to turn it off, even with the "Off" button pressed.

CHASSIS—BOTTOM VIEW





1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured with 1000 ohm per volt voltmeter.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common ground.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V1	12BE6	22K	1Ω	40Ω	20Ω	†1800Ω	†1800Ω	4.7meg
V2	12BA6	2.5meg	0Ω	40Ω	60Ω	†1800Ω	†1800Ω	150Ω
V3	12AV6	6.8meg	0Ω	0Ω	20Ω	0Ω	300K	†220K
V4	50C5	150Ω	470K	60Ω	180Ω	NC	†1800Ω	†200Ω
V5	35W4	TP	NC	180Ω	250Ω	245Ω	245Ω	¶100K

¶ THIS READING WILL VARY DEPENDING UPON THE CONDITION OF THE ELECTROLYTIC IN THE CIRCUIT.
† MEASURED FROM PIN 7 OF V5. NC NO CONNECTION TP TIE POINT

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TRUETONE
MODEL DC2086A

PHOTOFACT® Folder

VOCALINE MODELS ED-27-6, ED-27-12, ED-27M-6, ED-27M-12

VOCALINE MODELS ED-27-6, ED-27-12, ED-27M-6, ED-27M-12

MODEL ED-27M-12

VOCALINE MODELS ED-27-6, ED-27-12, ED-27M-6, ED-27M-12

TRADE NAME	Vocaline Models ED-27-6, ED-27-12, ED-27M-6, ED-27M-12 (Commaire)
MANUFACTURER	Vocaline Company of America, Inc., Old Saybrook, Connecticut
TYPE SET	AC-Battery Operated Crystal Controlled 10 Tube Citizens Band Transmitter-Receiver
POWER SUPPLY	110-120 Volts AC, 60 Cycles (or) 12 Volt Storage Battery (-12 Versions) 110-120 Volts AC, 60 Cycles (or) 6 Volt Storage Battery (-6 Versions)
RATING	48 Watts, .5 Amp. @117 Volts AC (Receive) ; 58 Watts, .58 Amp. @117 Volts AC (Transmit) 7.4 Amp@6.3 Volts DC (Receive); 8.2 Amp@6.3Volts DC (Transmit) 4.3 Amp@12.6 Volts DC (Receive-Transmit)
TUNING RANGE	Any 4 of Citizens Band Channels 1 thru 22.

NOTICE

ONLY THOSE PERSONS PROPERLY LICENSED BY FCC ARE PERMITTED TO MAKE CRYSTAL SUBSTITUTION OR EFFECT REPAIRS ON THE TRANSMITTER PORTION OF THIS UNIT.

SET 531 FOLDER 15

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of KZ431

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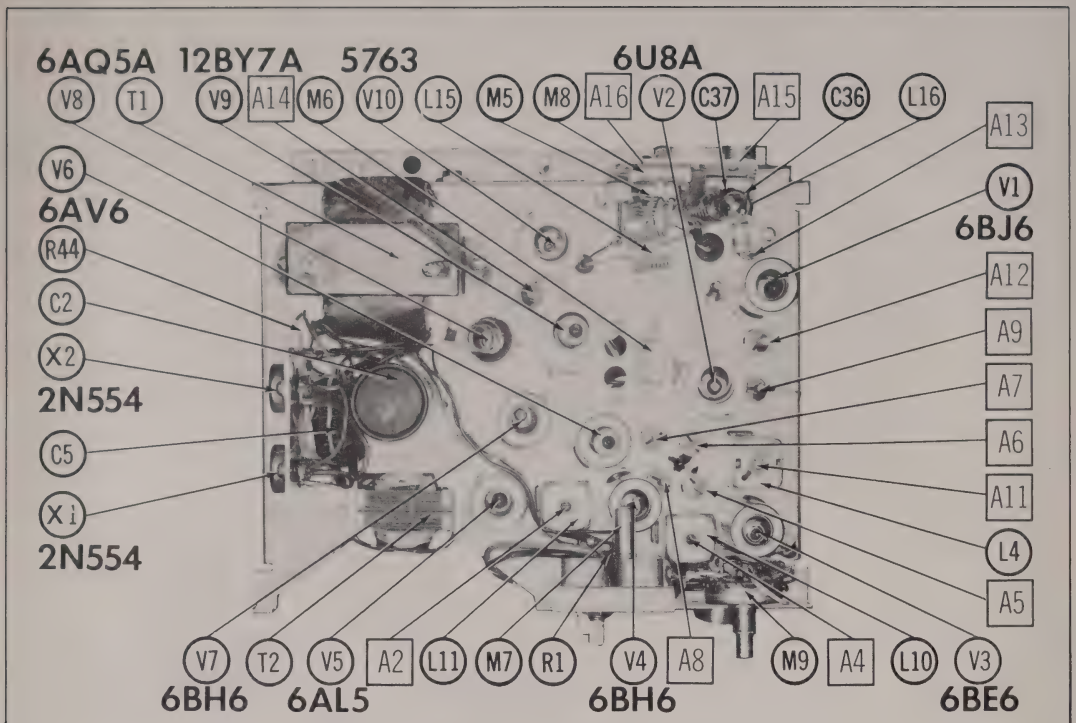


CHASSIS—TOP VIEW

ALIGNMENT INSTRUCTIONS

Receiver

1. Connect DC probe of VTVM to point Ⓐ, common to chassis.

   Connect high side of Signal Generator, 455KC (400∿ Mod.) thru .1mfd capacitor to pin 7 of V3, common to chassis. Adjust A1, A2, A3 and A4 for maximum deflection.

2. Connect high side of Signal Generator at the proper channel frequency to point Ⓑ. Adjust A5, A6, A7 and A8 for their proper channel frequency. These adjustments are made by turning the slug to maximum counterclockwise position and then turning clockwise until signal is heard from speaker, then adjust for maximum deflection of VTVM at point Ⓐ.

3. Connect DC probe of VTVM to point Ⓒ, common to chassis. Adjust A9 clockwise until there is no reading on the VTVM; then adjust A9 counterclockwise to maximum deflection; continue adjusting counterclockwise until reading is decreased approximately 10%. Short out oscillator (pin 9 of V2B to ground) several times to make sure oscillator is functioning properly.

4. Connect DC probe of VTVM to point Ⓐ, common to chassis.

   Connect High side of Signal Generator modulated at proper channel frequency, to antenna. Adjust A10, A11, A12 and A13 for maximum deflection.

Transmitter

Connect a 50 ohm dummy load to antenna jack.

1. Connect DC probe of VTVM to point Ⓓ, common to chassis.

   Adjust A14 clockwise until there is little or no reading on the VTVM; then adjust A14 counterclockwise to maximum deflection. Continue adjusting counterclockwise until reading is decreased approximately 10%. Grid drive should read about 35 volts. Short pin 2 of V9 to ground several times to make sure oscillator is functioning properly.

   Turn A16 so that the red dot on the screw is on top (maximum capacity).

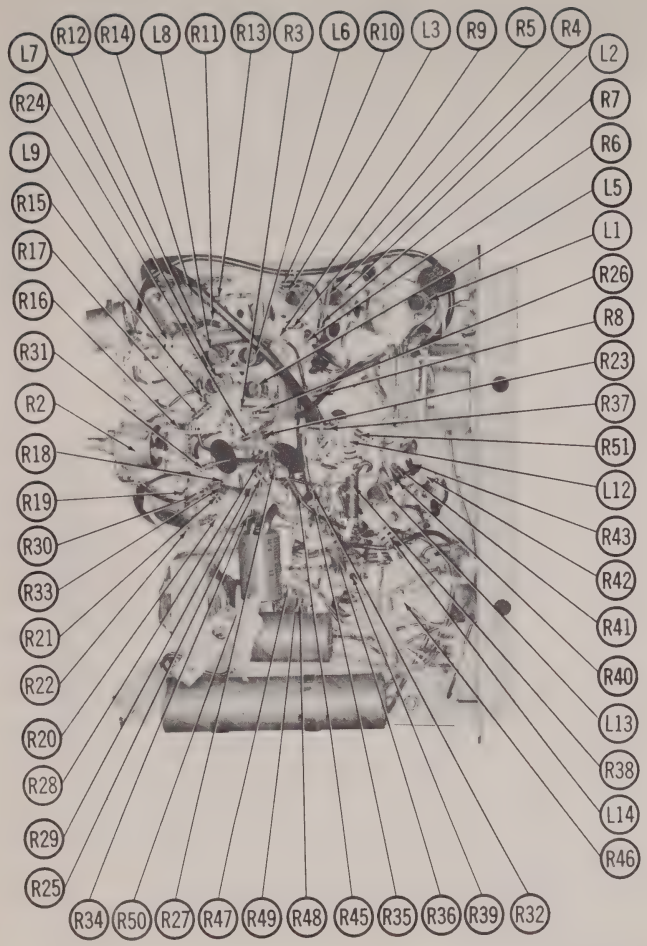
   Adjust A15 counterclockwise until it begins to tighten. Do not tighten too much.

   Switch on tuning indicator lamp. Adjust A16 clockwise until the bulb begins to light. It may not light very bright. Then adjust A15 for maximum brilliance of the bulb.

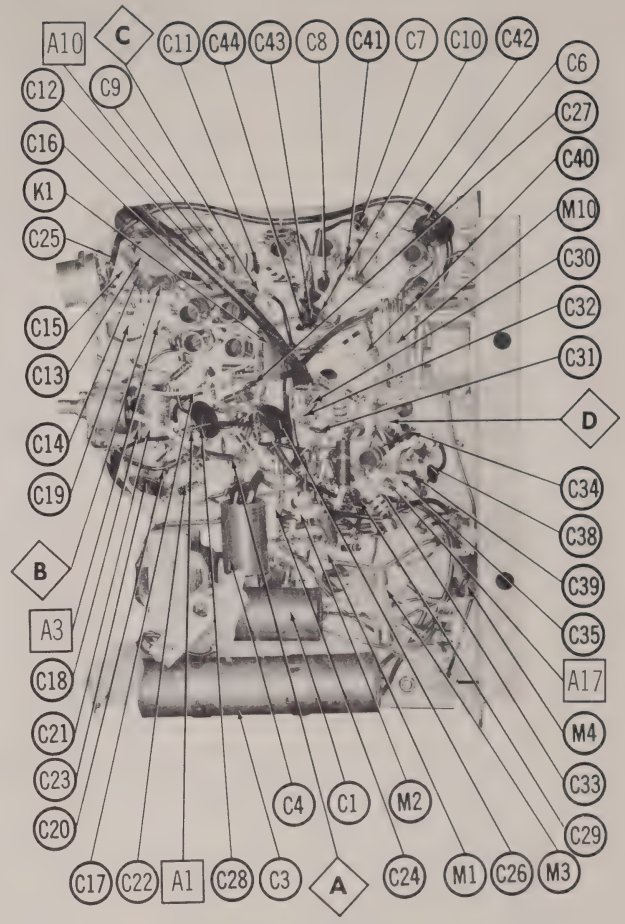
2. To adjust A17, connect DC probe of VTVM to point Ⓓ, common to chassis. Adjust A17 so that when rocking A16 no deflection is noticed on VTVM.

   Turn A16 so that the red dot on the screw is on top (maximum capacity). Adjust A15 counterclockwise until it begins to tighten. Do not tighten too much. Adjust A16 clockwise until the bulb begins to light. It may not light very bright. Then adjust A15 for maximum brilliance of the bulb.

   Make certain that the tuning indicator lamp is switched out of the circuit as soon as adjustments are completed.



CHASSIS BOTTOM VIEW
RESISTOR & INDUCTOR IDENT.



CHASSIS BOTTOM VIEW
ALIGNMENT, CAPACITOR & MISC. IDENT.

PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	TYPE (◆ GENERAL ELECTRIC ◆ RAYTHEON ◆ SYLVANIA ◆)
V1	RF Amplifier	6BJ6
V2	Mixer-Osc.	6U8A
V3	IF Converter	6BE6
V4	IF Amplifier	6BH6
V5	Det. -Squelch Rect.	6AL5

ITEM No.	USE	TYPE
V6	AF Amp. -Squelch Limiter-AVC Rectifier	6AV6 ①
V7	Squelch Amplifier	6BH6
V8	Output-Modulator	6AQ5A ②
V9	Trans. Oscillator	12BY7A ③
V10	Trans. Output	5763

① Some versions may use 6AQ6 in this application.
② Model ED-27M Serial #1655i (12V) and #02550 (6V) use 6BQ5 or 7189.
③ Some versions may use 6AQ5 in this application.

TRANSISTORS

ITEM No.	ORIG. TYPE	USE	REPLACEMENT DATA RCA PART No.	RAYTHEON PART No.	SYLVANIA PART No.	NOTES
X1	2N554*	Power Oscillator				PNP
X2	2N554*	Power Oscillator				PNP

* Alternate Type 2N234A or 2N1540.

ELECTROLYTIC CAPACITORS

ITEM No.	RATING CAP.	RATING VOLT.	VOCALINE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	NOTES
C1	40	200	77-38	PRS1580	BR4025	TC58	TD-40-250	TVA-1511	
C2A	■40	150	77-25	AFH3-10	C0090	FP311.5	TMT-3127	TVL-3442	
B	40	150							
C	▲40	150							
C3A	40	450	77-39	PRS2420	BBRD4445	TCD78	TDLD-31	TVA-2740	
B	40	450							
C4A	20	25	77-24	PRS2075	BBRD2202	TCD45	TDLD-3	TVA-2428	
B	20	25							
C5A	20	25	77-24	PRS2075	BBRD2202	TCD45	TDLD-3	TVA-2428	Note 1
B	20	25							Note 1

Note 1. Not used in some versions.

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	REMARKS	REPLACEMENT DATA AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C6	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C7	2000		BPD-002	DD-202	BYA10D2	CCD-202	B-220	5HK-D20
C8	50 10%		DI-50	DD-500	L10Q5	CCD-500	GP450	10TS-Q50
C9	20 NPO	Note 1	NPO-SI 20	DTZ-20	C10Q2C	CCTO-200	CNO-422	10TCC-Q20
C10	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C11	2000		BPD-002	DD-202	BYA10D2	CCD-202	B-220	5HK-D20
C12	10 10%	Note 1	DI-10	DD-100	L10Q1	CCD-100	GP410	10TS-Q10
C13	100		BPD-0001	DD-101	L10T1	CCD-101	GP310	10TS-T10
C14	1500 5%		1469-0015		5R5D15	CM-19B-152J	MCE456	MS-215
C15	.05 400V		V84C4S5	DD-503	CUB4S5	4DP-3-503	GEM-415	4TM-S50
C16	3000 10%		1469-003		1R5D3	CM-20B-302K	MCE461	MS-23
C17	100		BPD-0001	DD-101	L10T1	CCD-101	GP310	10TS-T10
C18	.05 400V		V84C4S5	DD-503	CUB4S5	4DP-3-503	GEM-415	4TM-S50
C19	.05 400V		V84C4S5	DD-503	CUB4S5	4DP-3-503	GEM-415	4TM-S50
C20	100		BPD-0001	DD-101	L10T1	CCD-101	GP310	10TS-T10
C21	.1 400V		P488N-1	DF-104	CUB4P1	4DP-3-104	GEM-401	4TM-P10
C22	100		BPD-0001	DD-101	L10T1	CCD-101	GP310	10TS-T10
C23	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C24	.05 400V		V84C4S5	DD-503	CUB4S5	4DP-3-503	GEM-415	4TM-S50
C25	2000	Note 2	BPD-002	DD-202	BYA10D2	CCD-202	B-220	5HK-D20
C26	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C27	100		BPD-0001	DD-101	L10T1	CCD-101	GP310	10TS-T10

FIXED CAPACITORS (cont)

ITEM No.	RATING	REMARKS	REPLACEMENT DATA AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C28	10000		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C29	2000		BPD-002	DD-202	BYA10D2	CCD-202	B-220	5HK-D20
C30	10 NPO		NPO-DI 10	DTZ-10	C10Q1C	CCTO-100	CNO-410	10TCC-Q10
C31	2000		BPD-002	DD-202	BYA10D2	CCD-202	B-220	5HK-D20
C32	250		DI-250	DD-251	L10T25	CCD-251	GP325	10TS-T25
C33	100		BPD-0001	DD-101	L10T1	CCD-101	GP310	10TS-T10
C34	50 10%		DI-50	DD-500	L10Q50	CCD-500	GP450	10TS-Q50
C35		#77-19						
C36	100-500	#77-36				304-M		
C37	2000		BPD-002	DD-202	BYA10D2	CCD-202	B-220	5HK-D20
C38	2000		BPD-002	DD-202	BYA10D2	CCD-202	B-220	5HK-D20
C39	2000		BPD-002	DD-202	BYA10D2	CCD-202	B-220	5HK-D20
C40	.05 400V		V84C4S5	DD-503	CUB4S5	4DP-3-503	GEM-415	4TM-S5
C41	2000		BPD-002	DD-202	BYA10D2	CCD-202	B-220	5HK-D20
C42	2000	Note 2	BPD-002	DD-202	BYA10D2	CCD-202	B-220	5HK-D20
C43	2000	Note 2	BPD-002	DD-202	BYA10D2	CCD-202	B-220	5HK-D20
C44	2000		BPD-002	DD-202	BYA10D2	CCD-202	B-220	5HK-D20

Vocaline Part Number.
Note 1. Not used when L4 is Part #86-72.
Note 2. Not used in some versions.

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA VOCALINE PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	500K	½	79-40	B-60-S	A47-500K-Z	Q13-133	U48	Volume
B	Shaft			Not Req.	FS-3	Not Req.	Not Req.	
C	Switch			Not Req.	SWE-20	76-2	US-27	Power Off-On
R2A	500K	½	79-43S	B-59	A47-500K-S	Q11-133	U50	Squelch
B	Shaft			Not Req.	FS-3	Not Req.	Not Req.	
C	Switch			KR-1	SWE-12	76-1	US-26	Squelch Off-On

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REPLACEMENT DATA IRC PART No.	WORKMAN TV PART No.	REMARKS
R3	2.2meg			
R4	2200Ω			
R5	100K			
R6	100K			
R7	470Ω			
R8	100K			
R9	100K			
R10	10K			
R11	22K			
R12	270K			
R13	470Ω			(10K) *
R14	470Ω			
R15	10K			
R16	470Ω			
R17	150Ω			
R18	470K			
R19	1meg			
R20	270K			
R21	270K			
R22	470K			
R23	470Ω			Note 1
R24	10meg			
R25	10meg			
R26	470K			
R27	100K			

ITEM No.	RATING	REPLACEMENT DATA IRC PART No.	WORKMAN TV PART No.	REMARKS
R28	10K			
R29	270K			
R30	10meg			(5meg) *
R31	100K			
R32	1meg			
R33	22K			
R34	22K			(47K) *
R35	470Ω			
R36	330Ω 1W			Note 2
R37	100K			
R38	22K 1W			
R39	470Ω			
R40	22K			
R41	100K			(22K) *
R42	22K 1W			(10K) *
R43	150Ω			
R44	82Ω 5W	PW5-82	5W-SQ-82	(110Ω) *
R45	2200Ω			
R46	220Ω 5W	PW5-220	5W-SQ-220	
R47	470Ω			
R48	470Ω			
R49	2200Ω			
R50	47K			
R51	470Ω			

* Alternate Value.
Note 1. Not used in some versions.
Note 2. 270Ω used when V8 is 6BQ5 or 7189.

PARTS LIST AND DESCRIPTIONS (Continued)

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	VOCALINE PART No.	REPLACEMENT DATA
K1	Audio Coupling	250mmf, 5000mmf, 250K, 500K	105-8	Aerovox PA-112-2 Centralab PC-71 Sprague T-4

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA					NOTES
		VOLCALINE PART No.	Merit PART No.	Miller PART No.	Stancor PART No.	Workman TV PART No.	
L1	Ant.	86-14		6250	RTC-8568	T232A	①Some versions use Part #86-72 (4MC). Delete C9, 12. ② Model ED-27M and late versions of ED-27 use Part #86-68.
L2	RF	86-15	TV-118	6171-A	RTC-8609	T216	
L3	Osc. Plate	86-15	TV-118	6171-A	RTC-8609	T216	
L4	1st IF (4.5MC)	86-11 ①	TV-113	6203	RTC-8545	T235	
L5	Osc.	86-16 ②					
L6	Osc.	86-16					
L7	Osc.	86-16					
L8	Osc.	86-16					
L9	RF Choke (1MH)	86-13	BC-513	4652	RTC-8532	T874	
L10	1st IF (455KC)	86-12	BC-352	12-C1	RTC-8632	T607	
L11	2nd IF (455KC)	86-12	BC-353	12-C2	RTC-8633	T608	
L12	RF Choke (1MH)	86-13	BC-513	4652	RTC-8532	T874	
L13	Osc. Plate	86-17	TV-118	6171-A	RTC-8609	T216	
L14	RF Choke (1MH)	86-13	BC-513	4652	RTC-8532	T874	
L15	Final Plate	86-18					
L16	RF Choke (1MH)	86-13	BC-513	4652	RTC-8532	T874	

TRANSFORMER (POWER)

ITEM No.	RATING			REPLACEMENT DATA					NOTES
	AC OPERATION			VOCALINE PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
	PRI.	SEC. 1	SEC. 2						
T1	117V@ .58A	120V@ .30A AC	12.6V@ 1.8A	99-14-1 ①					① Model ED-27-12, ED-27M-12 ② Used in Model ED-27-6, ED-27M-6
	DC OPERATION								
	INPUT	OUTPUT							
	12.6V@ 2.5A	120V@ .30A AC							
	6V DC OPERATION								
	INPUT	OUTPUT							
	6.3V@ 7.4A	120V@ .30A AC		99-14-2 ②					

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
	PRI.	SEC.	VOCALINE PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T2	5300Ω	3-4Ω	99-4 ①					① Part #99-40 used if V8 is 6BQ5 or 7189.

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP.	VOCALINE PART No.	QUAM PART No.	
SP1	4"	PM	3-4Ω	98-2	4A07	

POWER RECTIFIERS

ITEM No.	RATING	REPLACEMENT DATA				NOTES
	CURRENT (Measured)	VOCALINE PART No.	RCA PART No.	SARKES TARZIAN PART No.	SYLVANIA PART No.	
M1	.080A	85-5 *	1N1763 *	2F4 *	SR200 *	* Silicon
M2	.080A	85-5 *	1N1763 *	2F4 *	SR200 *	

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			VOCALINE PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M3	3AG	6A 250V P/T	Note 1		318006 (3AG 6A 250V)		GJV6	
M4	3AG	1½A 125V P/T S/B	Note 1		3150l.5 (3AG 1½A 125V S/B)		MDV 1½	

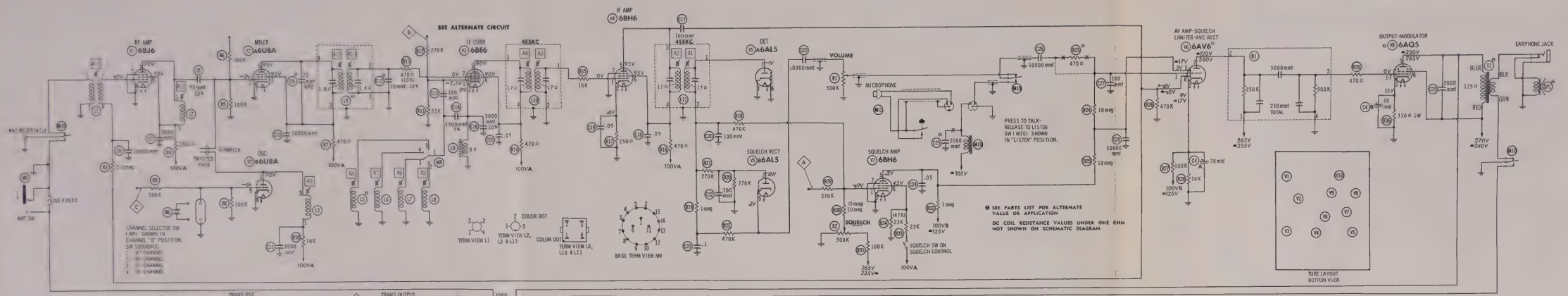
Note 1. Not used in some versions.

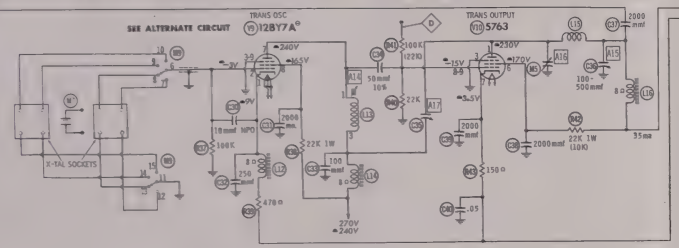
MISCELLANEOUS

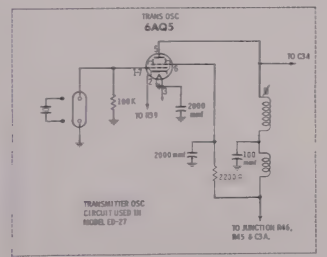
ITEM No.	PART NAME	VOCALINE PART No.	NOTES
M5	Tuning Cap.	77-37	One Section (Requires Extra Ground Wire)
		77-73	One Section (Grounds thru Mounting)
M6	Crystal	112-1-31	Receiver (31MC)
M7	Crystal	112-1-27.105	Transmitter (27.105MC)
M8	Switch	64-41	Antenna, SPST Slide Type
M9	Switch		Channel Selector (Rotary Type)
M10	Relay	93-2	Switching
	Microphone	102-3	

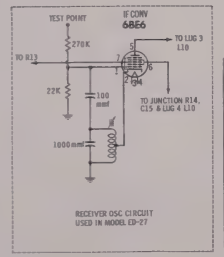
WIRING DATA

General-use Unshielded Hook-up Wire	Use BELDEN No.	8530 (Solid) Available in Ten Colors 8524 (Stranded) Available in Ten Colors
Shielded Hook-up Wire	Use BELDEN No.	8885
Bonding Strap	Use BELDEN No.	8661
Power Cord	Use BELDEN No.	1765-B (6 Ft. Length) 1725-K (7½ Ft. Length)


SEE ALTERNATE CIRCUIT
RF AMP V1 6BJ6
MIXER V2 6U8A
IF CONV V3 6BE6
455KC
IF AMP V4 6BH6
DET V5 A6AL5
VOLUME
MICROPHONE
PRESS TO TALK-RELEASE TO LISTEN SW (M10) SHOWN IN "LISTEN" POSITION.
SQUELCH AMP V7 6BH6
SQUELCH RECT V5 6AL5
SQUELCH
SQUELCH SW ON SQUELCH CONTROL
AF AMP-SQUELCH LIMITER-AVC RECT V6 6AV6
OUTPUT-MODULATOR V8 6AQ5
EARPHONE JACK
ANT RECEPTACLE
ANT SW
OSC V7 6U8A
GIMMICK
CHANNEL SELECTOR SW (M9) SHOWN IN CHANNEL "B" POSITION. SW SEQUENCE: 1 - "A" CHANNEL, 2 - "B" CHANNEL, 3 - "C" CHANNEL, 4 - "D" CHANNEL
TERM VIEW L1
TERM VIEW L2, L3 & L13
TERM VIEW L4, L10 & L11
BASE TERM VIEW M9
SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION
DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM
TUBE LAYOUT BOTTOM VIEW



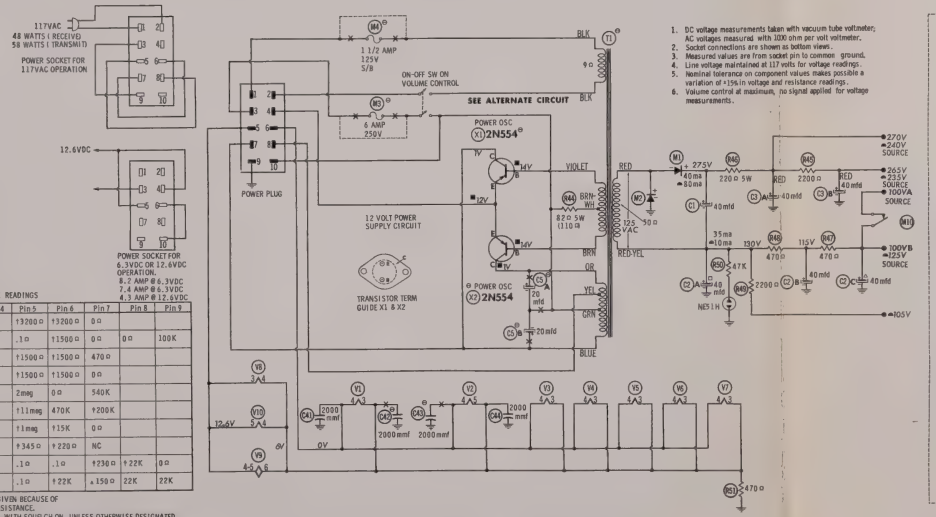




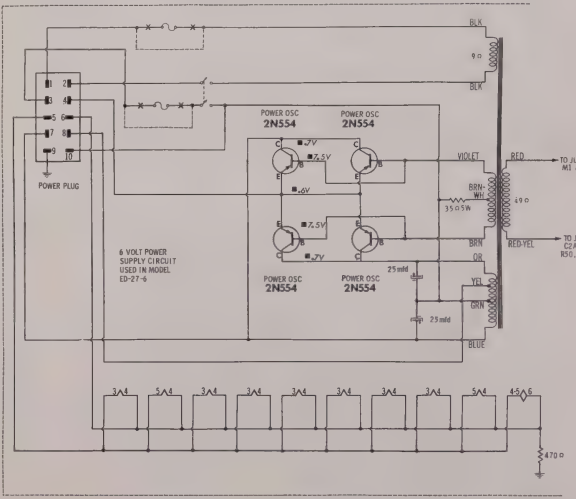
RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	6BJ6	2.7meg	0Ω	.1Ω	.1Ω	†3200Ω	†3200Ω	0Ω		
V2	6U8A	†11K	100K	†1500Ω	.1Ω	.1Ω	†1500Ω	0Ω	0Ω	100K
V3	6BE6	22K	8Ω	.1Ω	.1Ω	†1500Ω	†1500Ω	470Ω		
V4	6BH6	10K	150Ω	.1Ω	.1Ω	†1500Ω	†1500Ω	0Ω		
V5	6AL5	0Ω	270K	.1Ω	.1Ω	2meg	0Ω	540K		
V6	6AV6	†21meg	10K	.1Ω	.1Ω	†11meg	470K	▼200K		
V7	6BH6	1meg	0Ω	.1Ω	.1Ω	†1meg	†15K	0Ω		
V8	6AQ5A	500K	330Ω	.1Ω	.1Ω	▼345Ω	▼220Ω	NC		
V9	12BY7A	▲470Ω	100K	0Ω	.1Ω	.1Ω	.1Ω	▼230Ω	▼22K	0Ω
V10	5763	▼345Ω	NC	0Ω	.1Ω	.1Ω	▼22K	▲150Ω	22K	22K

RESISTANCE MEASUREMENTS FOR X1 AND X2 NOT GIVEN BECAUSE OF THE WIDE VARIATION IN INTERNAL TRANSISTOR RESISTANCE.
ALL MEASUREMENTS MADE IN "RECEIVE" POSITION, WITH SQUELCH ON, UNLESS OTHERWISE DESIGNATED.
▬ MEASURED IN "TRANSMIT" POSITION.
▼ MEASURED FROM OUTPUT OF M1.
† MEASURED FROM JUNCTION OF C1 & C2A.
▲ MEASURED FROM CATHODE
■ MEASURED FROM NEGATIVE BATTERY CONNECTOR.
NC NO CONNECTION
ALL RESISTANCE MEASUREMENTS MADE USING 117VAC POWER CORD.
ALL TRANSISTOR MEASUREMENTS MADE IN DC OPERATION.



1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured with 1000 ohm per volt voltmeter.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common ground.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.


POWER PLUG
6 VOLT POWER SUPPLY CIRCUIT USED IN MODEL ED-27-6
POWER OSC 2N554
POWER OSC 2N554
POWER OSC 2N554
POWER OSC 2N554
TO JUNCTION M1 & M2
TO JUNCTION C2A, C1, R50, R49 & R48.

NUMBERS ASSIGNED TO COILS, SWITCHES, PLUGS, SOCKETS, AND TRANSFORMERS ARE TO FACILITATE CIRCUIT TRACING OR COMPONENT REPLACEMENT AND MAY NOT NECESSARILY BE FOUND ON THE UNIT.

VOCALINE MODELS ED-27-6, ED-27-12, ED-27M-6, ED-27M-12

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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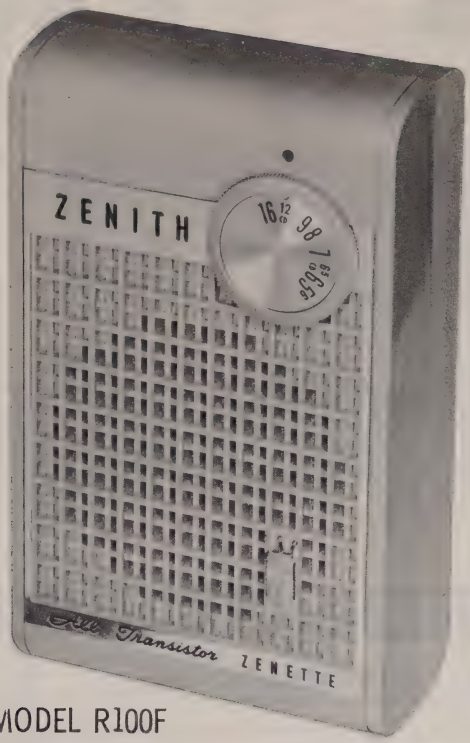
PHOTOFACT® Folder with CIRCUITRACE®

ZENITH MODELS R100C, F, L, P, W (Ch. 6ET42Z1, 6ET42Z2)

ZENITH MODELS R100C, F, L, P, W (Ch. 6ET42Z1, 6ET42Z2)



MODEL R100F

TRADE NAME	Zenith Models R100C, R100F, R100L, R100P, R100W (Ch. 6ET42Z1, 6ET42Z2)		
MANUFACTURER	Zenith Radio Corp., 6001 Dickens Ave., Chicago 39, Illinois		
TYPE SET	Battery Operated Transistorized Portable AM Receiver		
POWER SUPPLY	4.5 Volts DC	RATING	10MA @ 4.5 Volts DC (No Signal, Min. Volume)
TUNING RANGE—BROADCAST	540 – 1600KC		20MA @ 4.5 Volts DC (Signal, Normal Volume)

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading.

Suggested Alignment Tools: A1, A2, A3, A5..... GENERAL CEMENT #8282, 8606, 8606-L, 9291
WALSCO #2526, 2541, 2542, 2543, 2544
A4, A6..... GENERAL CEMENT #5000, 5003, 8276, 8290
WALSCO #2512, 2522, 2523, 2537, 2515, 2525

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	Loop	455KC (400% Mod.)	Tuning gang fully open.	Across voice coil.	A1, A2, A3	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
2.	"	1620KC	"	"	A4	"
3.	"	535KC	Tuning gang fully closed.	"	A5	Adjust for maximum output. Repeat Steps 2 and 3.
4.	"	1260KC	1260KC	"	A6	Adjust for maximum output.

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

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SET 531 FOLDER 16

PARTS LIST AND DESCRIPTIONS

WIRING DATA

General-use Unshielded Hook-up Wire .....Use BELDEN No. 8530 (Solid) Available in Ten Colors
8524 (Stranded) Available in Ten Colors

TRANSISTORS

ITEM No.	ORIG. TYPE	USE	REPLACEMENT DATA			NOTES
			RCA PART No.	RAYTHEON PART No.	SYLVANIA PART No.	
X1	2N411*	Converter	2N411	2N486	2N411	PNP
	2N1108 †	Converter				PNP
X2	2N409 *	1st IF Amplifier	2N409	2N483	2N409	PNP
	2N1110 †	1st IF Amplifier				PNP
X3	2N409 *	2nd IF Amplifier	2N409	2N483	2N409	PNP
	2N1111 †	2nd IF Amplifier				PNP
X4	2N407 *	Driver	2N407	2N362	2N407	PNP
	R120 †	Driver				PNP
X5	2N407 *	Output	2N407	2N360	2N407	PNP — Matched Pair
	R16 †	Output				PNP — Matched Pair
X6	2N407 *	Output	2N407	2N360	2N407	PNP — Matched Pair
	R18 †	Output				PNP — Matched Pair

* Used in Chassis 6ET42Z2.
† Used in Chassis 6ET42Z1.

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						NOTES
	CAP.	VOLT.	ZENITH PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	
C1	16	3	22-2871	PTT-3015	NLW15-12	TT6X15	ML15-3	TE-1053.5	
C2	5	12	22-2864	PTT-12005	NLW5-15	TT12X5	MLV5-12	TE-1127	
C3A	50	1	22-3252		NLW50-3	PETA2385	ML50-3	TE-1058	
B	50	4.5			NLW50-10		ML50-6	TE-1100	

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

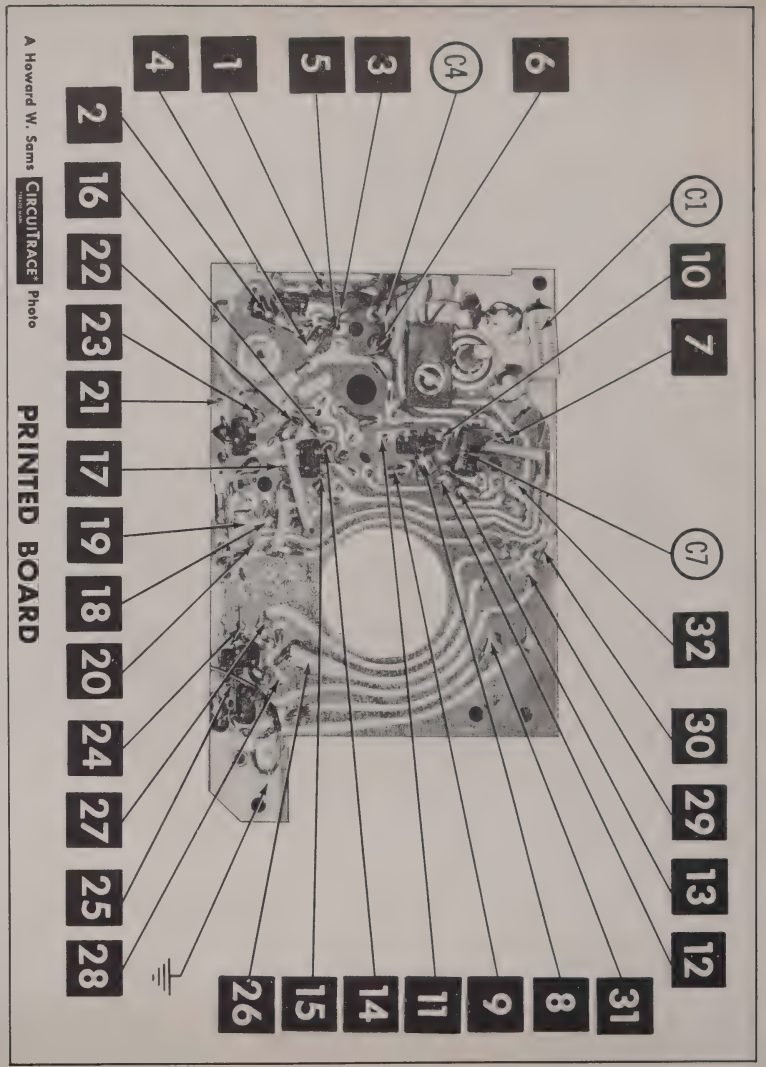
ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C4	3.3		NPO-SI 3.3	TCZ-3R3	C10V33C	CCTO-3R3	CNO-533	10TCC-V33
C5	50000 10V		C80V503AM	UK10-503	H-05S5		TA-150	TG-S50
C6	10000 25V		C80V103AM	DM-103	H-05S1		TA-110	TG-S10
C7	250 5%		1469-00025	TCZ-240	22R5T25	CM-19B-251J	MCE240	MS-325
C8	10 N330	#22-3250		TCA-10		*		10TCS-Q10
C9	50000 10V		C80V503AM	UK10-503	H-05S5		TA-150	TG-S50
C10	50000		C80V503AM	UK10-503	H-05S5		TA-150	TG-S50
C11	50000		C80V503AM	UK10-503	H-05S5		TA-150	TG-S50
C12	6 N330	#22-3260①				*		
C13	50000 10V		C80V503AM	UK10-503	H-05S5		TA-150	TG-S50
C14	50000 10V		C80V503AM	UK10-503	H-05S5		TA-150	TG-S50
C15	20000		C80V203AM	DA-203	H-05S2		TA-120	TG-S20
C16	50000 10V		C80V503AM	UK10-503	H-05S5		TA-150	TG-S50
C17	10000	②	C80V103AM	DM-103	H-05S1		TA-110	TG-S10
C18	5000		C80V502AM	DM-502	H-05D5	CCD-502	TA-250	TG-D50
C19	5000		C80V502AM	DM-502	H-05D5	CCD-502	TA-250	TG-D50
C20	50000 10V		C80V503AM	UK10-503	H-05S5		TA-150	TG-S50

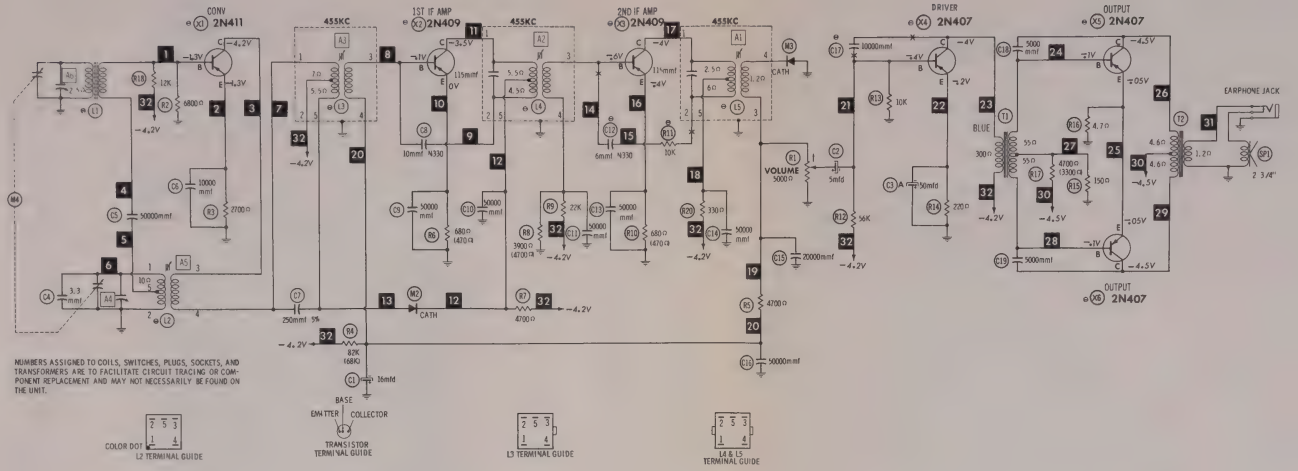
① Not used in Chassis 6ET42Z1.
② Not used in some versions.
\# Zenith Part Number.
* Not normally in distributor's stock. Available thru distributor on order to manufacturer.

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	ZENITH PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	
R1	5000Ω	1/4	63-4681					Volume & Switch

(CONTINUED ON REAR PAGE)





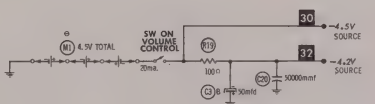
⊖ SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION (CONTROL VIEWED FROM SHAFT END)

1. DC voltage measurements taken with vacuum tube voltmeter.
2. Socket connections or transistor terminals are shown as bottom views.
3. Measured values are from socket pin or terminal to common ground.
4. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
5. Volume control at maximum, no signal applied for voltage measurements.

RESISTANCE MEASUREMENTS NOT GIVEN BECAUSE OF THE WIDE VARIATION IN INTERNAL TRANSISTOR RESISTANCE.



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ZENITH MODELS R100C, F, L, P, W (Ch. 6ET42Z1, 6ET42Z2)

PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REPLACEMENT DATA		
		IRC PART No.	WORKMAN TV PART No.	REMARKS
R2	6800Ω			
R3	2700Ω			
R4	82K			(68K) *
R5	4700Ω			
R6	680Ω			(470Ω) *
R7	4700Ω			
R8	3900Ω			(4700Ω) *
R9	22K			
R10	680Ω			(470Ω) *
R11	10K			Note 1

ITEM No.	RATING	REPLACEMENT DATA		
		IRC PART No.	WORKMAN TV PART No.	REMARKS
R12	56K			
R13	10K			
R14	220Ω			
R15	150Ω			
R16	4.7Ω			
R17	4700Ω			(3300Ω) †
R18	12K			
R19	100Ω			
R20	330Ω			

* Used in Chassis 6ET42Z1.
† Alternate Value.
Note 1. Not used in Chassis 6ET42Z1.

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA					NOTES
		ZENITH PART No.	Merit PART No.	Miller PART No.	Stancor PART No.	Workman TV PART No.	
L1	Loopstick	S-48656					① Part #95-1773 used in Chassis 6ET42Z1.
L2	Osc.	95-1734					② Part #95-1774 used in Chassis 6ET42Z1.
L3	1st IF	95-1731 ①					③ Part #95-1775 used in Chassis 6ET42Z1.
L4	2nd IF	95-1732 ②					
L5	3rd IF	95-1733 ③					

TRANSFORMER (DRIVER)

ITEM No.	TURNS RATIO		REPLACEMENT DATA					NOTES
	PRI.	SEC.	ZENITH PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T1	1.4	1	95-1729					

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
	PRI.	SEC.	ZENITH PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T2	900Ω CT	14-16Ω	95-1730					

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP.	ZENITH PART No.	QUAM PART No.	
SP1	2 3/4"	PM	14-16Ω	49-918		

BATTERIES

ITEM No.	VOLTAGE	ZENITH PART No.	REPLACEMENT DATA						NOTES
			BURGESS		EVEREADY		MALLORY		
			"A"	"B"	"A"	"B"	"A"	"B"	
M1	1.5V	Z-9 *		H6-9		E-9		ZM-9	3 Required. * Alternate Part #Z-8

SIGNAL DIODES

ITEM No.	ORIG. TYPE	REPLACEMENT DATA				NOTES
		ZENITH PART No.	GENERAL ELECTRIC PART No.	RAYTHEON PART No.	SYLVANIA PART No.	
M2		103-19		1N60	1N60	Overload (Pigtail)
M3		103-19		1N60	1N60	Detector - AVC (Pigtail)

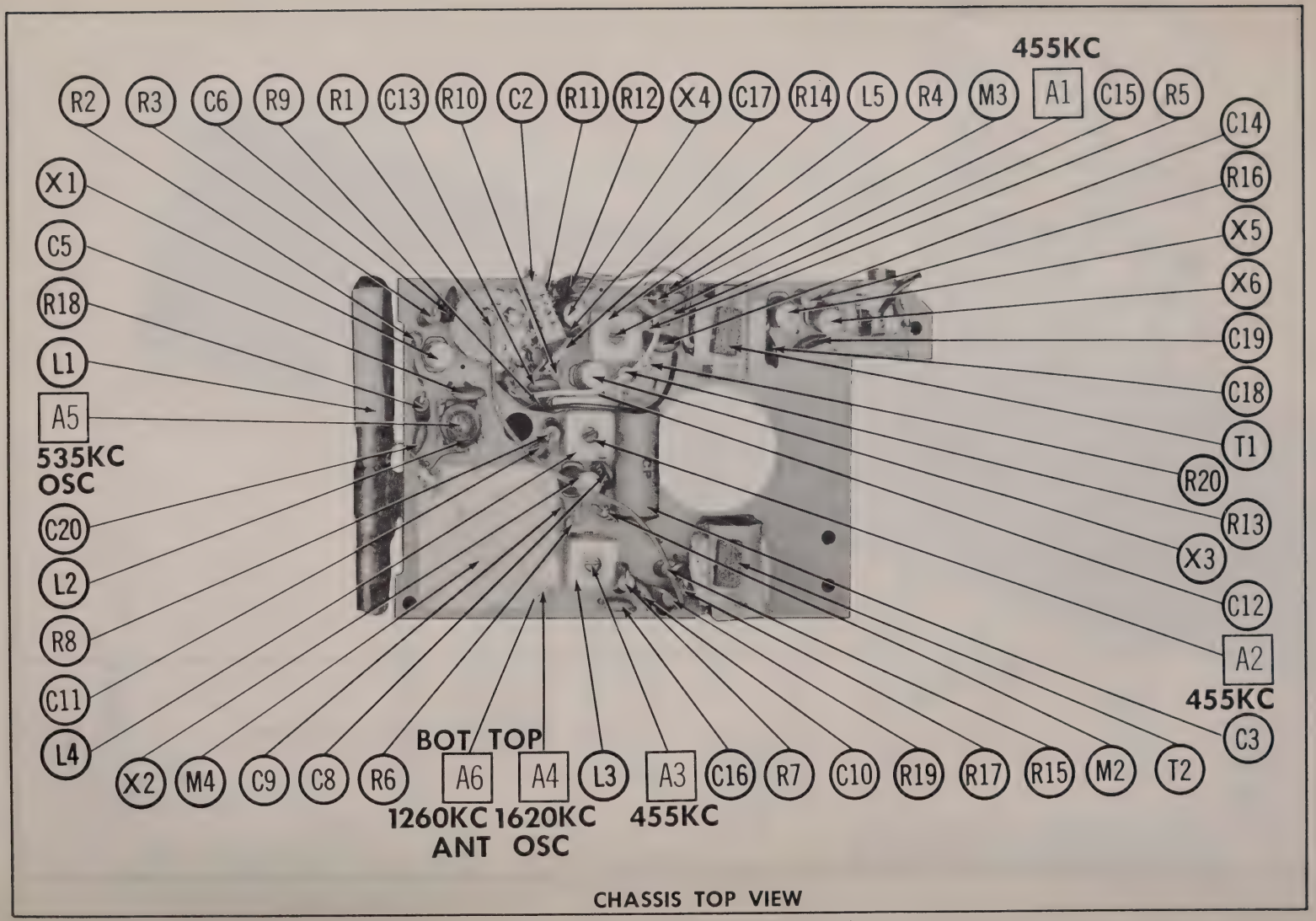
MISCELLANEOUS

ITEM No.	PART NAME	ZENITH PART No.	NOTES
M4	Tuning Cap.	22-3251	2 Gang

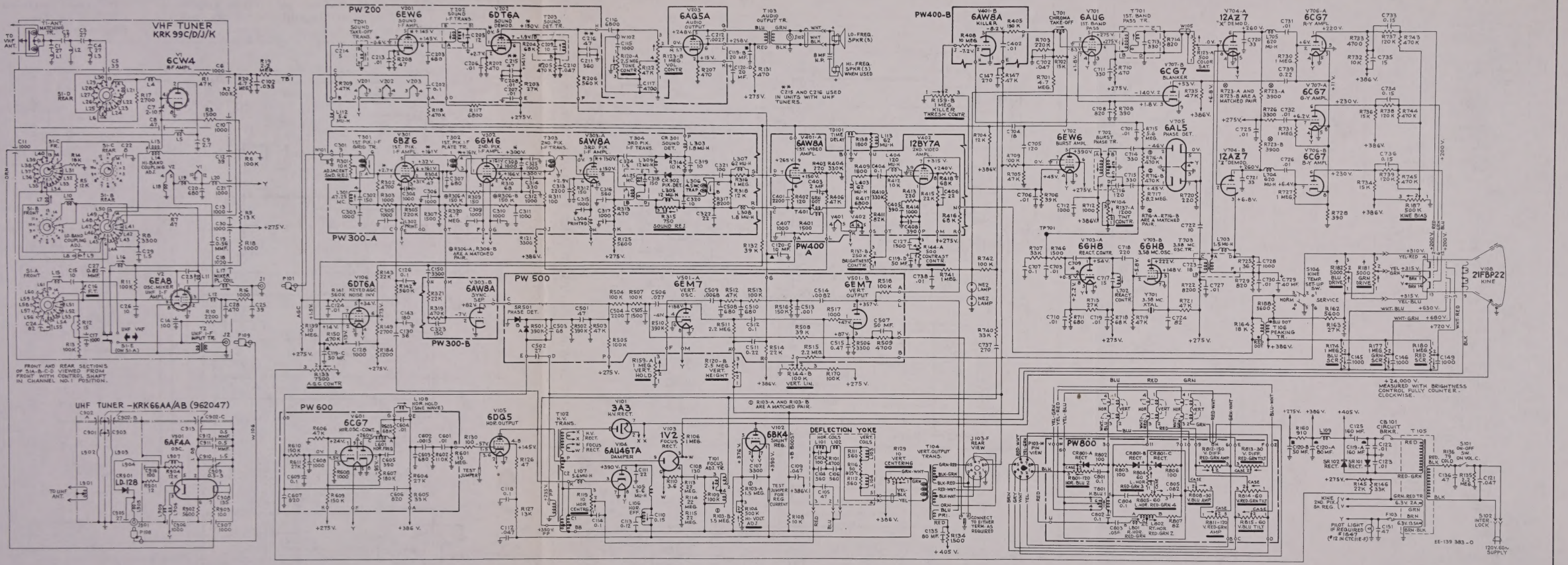
CABINETS & CABINET PARTS

(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

NAME	PART NO.	DESCRIPTION
Knob	S-48663	Tuning, Model R100W
Knob	S-48670	Tuning, Model R100F
Knob	S-48673	Tuning, Model R100C
Knob	S-48676	Tuning, Model R100L
Knob	S-50145	Tuning, Model R100P
Knob	46-2579	Volume, Model R100P
Knob	46-2384	Volume, Model R100L
Knob	46-2383	Volume, Model R100C
Knob	46-2382	Volume, Model R100F
Knob	46-2381	Volume, Model R100W



CHASSIS TOP VIEW



The schematic is shown in the latest condition at the time of printing.

All resistance value in ohms. K = 1000.

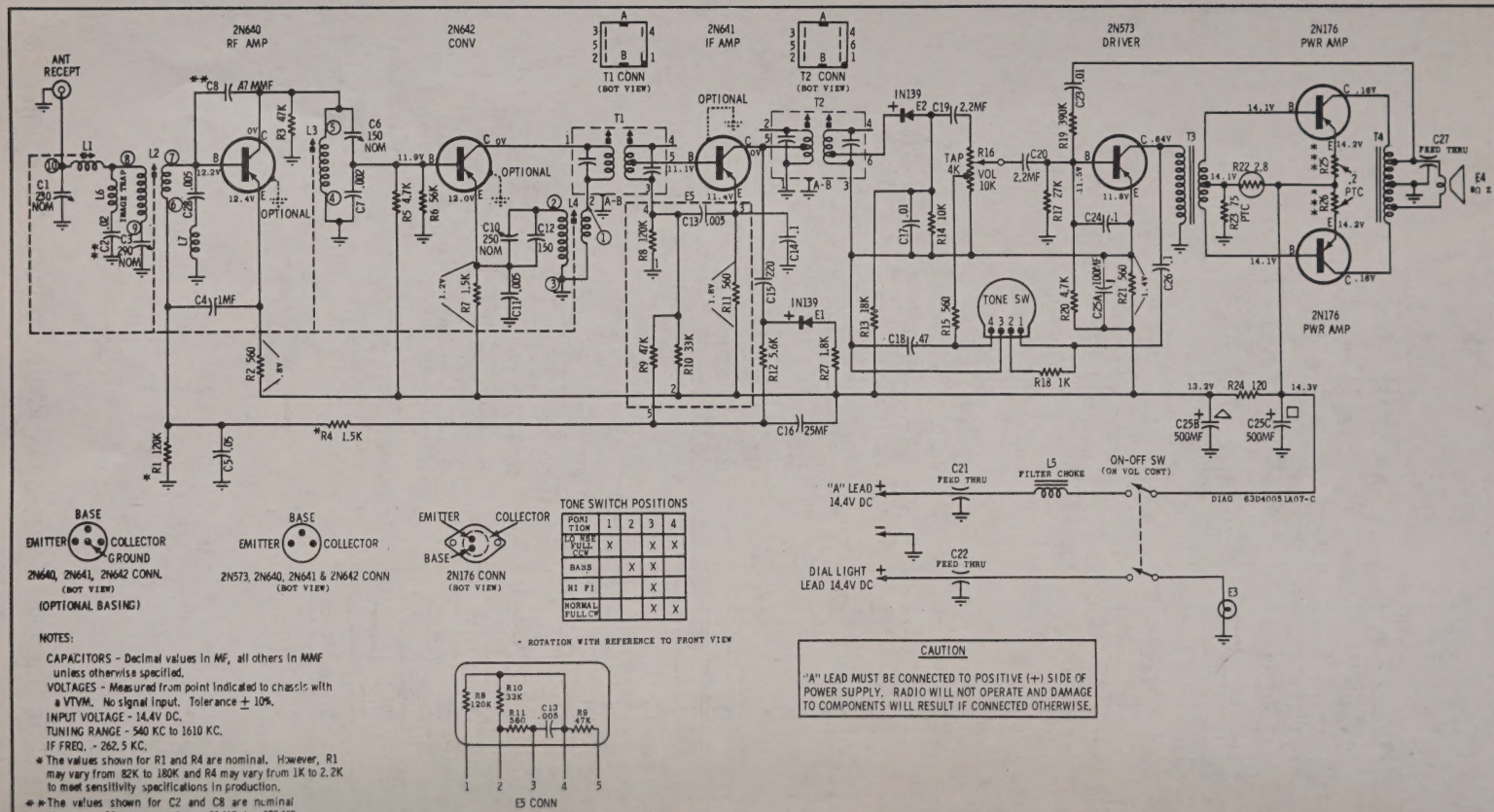
All capacitance values less than 1 in MF and above 1 in MMF unless otherwise noted.

Direction of arrows at controls indicates clockwise rotation.

All voltages measured with "Volt-Ohmyst" and with no signal input. Voltages should hold within ±20% with 120 v, a-c supply.

RCA VICTOR CHASSIS CTC11A, B, C, D, E, F, H, J

Schematic Diagram Courtesy of Radio Corporation of America



NOTES:

CAPACITORS - Decimal values in MF, all others in MMF unless otherwise specified.
VOLTAGES - Measured from point indicated to chassis with a VTVM. No signal input. Tolerance ± 10%.
INPUT VOLTAGE - 14.4V DC.
TUNING RANGE - 540 KC to 1610 KC.
IF FREQ. - 262.5 KC.

* The values shown for R1 and R4 are nominal. However, R1 may vary from 82K to 180K and R4 may vary from 1K to 2.2K to meet sensitivity specifications in production.

** The values shown for C2 and C8 are nominal However, C2 may vary from .01 MF to .025 MF and C8 may vary from .2MMF to 1.0 MMF.

*** The values shown for R25 and R26 are nominal however, both values may vary up to 0.3 ohms in production.

FORD MODELS 1TMC (C1VV-18810-C), 1TMS (C1SF-18810-B)

Schematic Diagram Courtesy of Motorola Inc.

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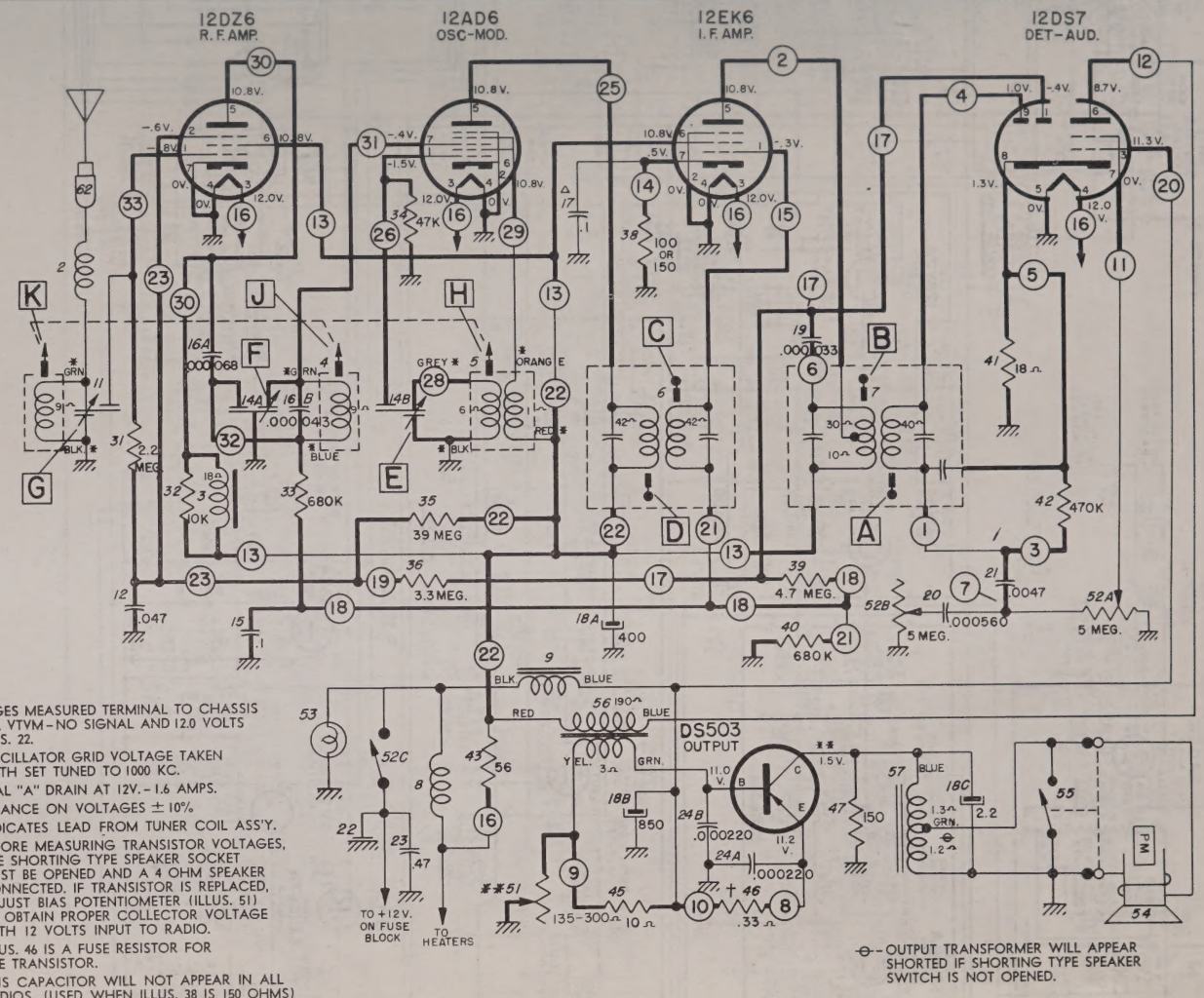
CHEVROLET MODEL 988413



VOLTAGES MEASURED TERMINAL TO CHASSIS WITH A VTVM - NO SIGNAL AND 12.0 VOLTS AT ILLUS. 22.

OSCILLATOR GRID VOLTAGE TAKEN WITH SET TUNED TO 1000 KC.

TOTAL "A" DRAIN AT 12V. - 1.6 AMPS.

TOLERANCE ON VOLTAGES ± 10%

*- INDICATES LEAD FROM TUNER ASS'Y.

**- BEFORE MEASURING TRANSISTOR VOLTAGES, THE SHORTING TYPE SPEAKER SOCKET MUST BE OPENED AND A 4 OHM SPEAKER CONNECTED. IF TRANSISTOR IS REPLACED, ADJUST BIAS POTENTIOMETER (ILLUS. 51) TO OBTAIN PROPER COLLECTOR VOLTAGE WITH 12 VOLTS INPUT TO RADIO.

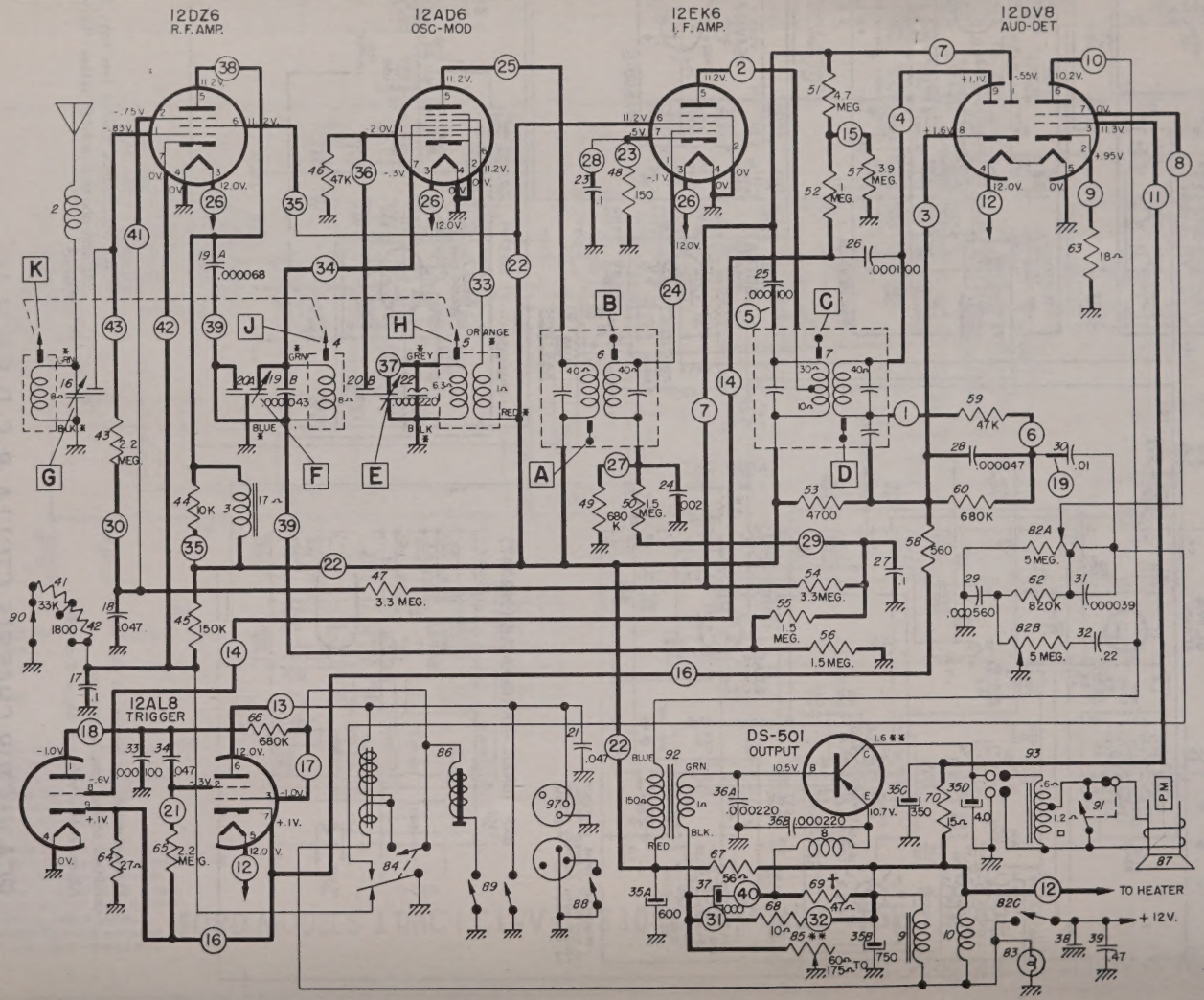
+- ILLUS. 46 IS A FUSE RESISTOR FOR THE TRANSISTOR.

△- THIS CAPACITOR WILL NOT APPEAR IN ALL RADIOS. (USED WHEN ILLUS. 38 IS 150 OHMS)

⊖- OUTPUT TRANSFORMER WILL APPEAR SHORTED IF SHORTING TYPE SPEAKER SWITCH IS NOT OPENED.

Schematic Diagram Courtesy of Delco Radio Div., General Motors Corp.

BUICK MODEL 980135


12DZ6
R.F. AMP.
12AD6
OSC-MOD
12EK6
I.F. AMP.
12DV8
AUD-DET
12AL8
TRIGGER
DS-501
OUTPUT
TO HEATER
+ 12V.
3.3 MEG.
1.5 MEG.
680K
150K
2.2 MEG.
4.7 MEG.
3.9 MEG.
1 MEG.
47K
680K
4700
5 MEG.
820K
.000068
.000043
.000220
.000100
.0001100
.000047
.01
.000560
.000039
.22
.047
.002
.000220
.000100
.000047
.000068
.000560
.000039
.047
.22
.002
.01
.000100
.0001100
.000220
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